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WASTEWATER MANAGEMENT STUDY

1970

VIII
PUBLIC INVOLVEMENT

1985

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FOR

CLEVELAND - AKRON METROPOLITAN

AND

THREE RIVERS WATERSHED AREAS

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6 July 1981

Defense Technical Information Center
ATTN: DTIC/DDA/Paul F. Cooper
Alexandria, VA. 22314

Dear Mr. Cooper:

Enclosed are copies of appendices to the report entitled: Wastewater Management Study for the Cleveland-Akron Metropolitan and Three Rivers Watershed Areas. Please make the necessary arrangements to have these reports available from the National Technical Information Service.

If you require any further input, please feel free to contact me at the above address.

Sincerely,
Thomas Van Wart
THOMAS VAN WART
Chief, Technical Library

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→ trip mined line. These people represent a great variety of interests. Such complexity of size and interest calls for extensive public input. The objective communication between the planner and the many people whose interests are affected by the results of the study. Social, political, and environmental aspects of any planning program are as important as engineering and economic feasibility. It is only through a close working relationship with the local people that the social needs and political realities can be related to the study. ←

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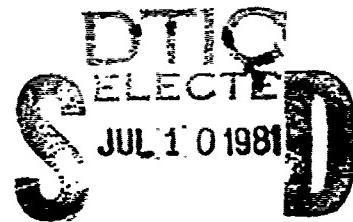
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A. PURPOSE OF PUBLIC INVOLVEMENT

Participation by the public in water resources planning has become vital because of the increasing number of citizens who desire to be involved in helping make decisions in local planning. The Cleveland-Akron Wastewater Management Study affects some 3-3/4 million people. There are almost 2-1/2 million people living today in the Three Rivers Watershed region, another 3/4 million living in the western counties where land treatment is possible, and 1/2 million living in the counties where sludge might be used to reclaim strip mined land. These people represent a great variety of interests. Such complexity of size and interest calls for extensive public input. The objective of a public participation program is to establish and maintain meaningful and effective communication between the planner and the many people whose interests are affected by the results of the study. Social, political, and environmental aspects of any planning program are as important as engineering and economic feasibility. It is only through a close working relationship with the local people that the social needs and political realities can be related to the study.

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B. PUBLIC INVOLVEMENT PROGRAM

Meetings, briefings, workshops, committees, brochures, newsletters, questionnaires, news media contacts, and contacts with individuals are all methods that can be used in achieving the goal of two-way communication.

1. Public Meetings

There are three public meetings normally required: initial public meetings, formulation stage public meetings, and final stage public meetings.

Initial public meetings attempt to identify water pollution problems of the region to the public and describe the types of treatment technology currently available to combat water pollution. The advantages and disadvantages of these methodologies are explained, as well as the technical goals of the study. Other items such as presentation of the planning process, study timing, and how planning may be translated into action are discussed to encourage public participation in the planning process. The public can then further point out local problems and needs, and voice questions about the available technology, the planning process, and other aspects.

Formulation stage public meetings consist of the presentation of alternative plans in sufficient detail so that the people can see how they may be affected. Impacts on local areas and on regional planning objectives by various alternative systems are identified using maps and visual aids. All alternatives are presented with comparative beneficial and detrimental effects explained as well as the institutional

arrangements necessary for implementation. Public input is especially important during and after these meetings as part of the selection process.

The final public meetings consist of the presentation of finalized alternatives to be recommended and the environmental impacts associated therewith. Costs, time-phasing of construction, beneficial and detrimental effects, opportunities and concerns, and possible implementation arrangements are explained. Final public comment is obtained at this series of meetings.

Initial public meetings were held 18 and 19 January 1972 in Akron and Cleveland, OH, respectively. An oral presentation with slides was given and statements were made and questions asked by various citizen groups. The statements were favorable to the study effort. The questions concerned technology and project implementation for the most part. Between the initial and formulation stage public meetings, most public comment was complimentary to the general nature of the study, although some affected areas were opposed to some of the results of the feasibility study. Although the initial public meetings generated limited public involvement, much reaction accompanied distribution of the feasibility study to almost 1,000 people.

Three formal formulation stage public meetings were held on 12, 13, and 14 December 1972 in Akron, Cleveland, and Chagrin Falls, OH, respectively. Each meeting was preceded by radio announcement and mailed bulletin to invite public attendance. An oral presentation with slides was given to explain the progress to date, costs of various alternatives, and

possible geographical location of system components. A question and answer session followed the presentation at each of the three meetings. Corps personnel offered to speak at any location and to answer questions concerning the study. Many workshop sessions were generated as a result of these meetings.

Four final stage public meetings were held; one in the western area where spray irrigation is a possible solution, two in the Three Rivers District drainage basin, and a fourth in Harrison County, OH, where sludge use in strip-mine reclamation is possible. See Attachments 10 thru 13 for documentation of the four final public meetings.

2. Other meetings, workshops, and briefings

Over 50 public meetings, presentations, workshops, and briefings have been held during the survey scope portion of the study. These are listed under the record of events and located on the accompanying map. Below are descriptions of five types of contacts that have been made.

a. Public Meetings

These are formal meetings organized and conducted by the Corps of Engineers and sometimes co-chaired by the State of Ohio. The purpose, scope, and status of the study are presented at the meeting, and various governmental representatives, commercial/industrial interests, and the public make comments on the effort. The meetings are followed by a question and answer period. The meetings are open to the public, although attendance at public meetings has sometimes been less than at meetings for which there were personal invitations.

b. Presentations

Local groups often invite District personnel to present information to a group of governmental officials, business leaders, the public, or a combination of the three. The formality of the meeting varies depending upon the size and type of audience. Although the meetings are often by invitation, the District usually requests that they be open to any interested citizens. There is always a question and answer period following the presentation. Attachment 1 is an example of the kind of presentation that was made during the formulation stage of the study.

c. Workshops

These are informal meetings with small groups (usually less than twenty) at which a brief presentation is followed by a discussion group or groups. The audience establishes the discussion material by way of their questions. The workshops frequently follow up public meetings or presentations.

d. Briefings

Briefings involve personal discussions with local leaders in affected areas. The purpose of such meetings is to insure that these individuals have accurate information on the study.

e. Media Contacts

These are interviews for newspapers, radio, or television.

There were approximately 13 workshops initiated by public request during formulation stage public involvement. At most of these workshops, the participants adequately represented the affected people, including

local politicians, farmers, planners, and businessmen. The sponsors of the workshops included League of Women Voters, Cooperative Extension Services, Regional Planning Commissions, and City Councils. The workshops were used to clarify various viewpoints of the public, identify real local concerns, and answer questions of specific nature. In this they were most successful and thus rate as the top public involvement method in the study effort. The news media in the Akron-Cleveland area called attention to public appearances by Corps personnel and explained the urgency of water quality problems to the public. Several newspapers publically applauded the study and its goals, while others attacked some of the concepts. Newspapers in certain areas reported inaccurate information, mostly in areas where spray irrigation of secondary effluent was an alternative component. Some papers inferred that raw sewage would be spray irrigated. Others called the farming areas "leach beds." Statements were also made to the effect that the land would not accomplish the renovating task. Other misconceptions generated by news media involved the reuse of sludge. Harrison County, an area needing strip mine reclamation, was referred to as a "dumping site" and a "cesspool" for Cleveland's waste. Although there were detrimental effects of such misinformation, there was also a beneficial effect. Public interest was generated affording the opportunity to conduct workshops in locations over the entire study area. Many misconceptions were cleared up by these meetings. Five representative newspaper articles are included in Attachment 9. Over 200 articles appeared in more than 45 newspapers in Ohio.

C. PARTICIPANTS

Members of the public who participated in the study were representatives of a broad spectrum of public interest. They represented local interests such as Chambers of Commerce, Leagues of Women Voters, coordinating agencies, City, County and multi-County Planning Commissions, Kiwanis and Rotary Clubs, political groups, extention agencies, the Ohio Environmental Council, and other groups which were affected by plans; State interests such as those of the Ohio Department of Natural Resources and the Ohio Environmental Protection Agency; and Federal interests such as the Corps of Engineers, the Environmental Protection Agency, and the U. S. Soil Conservation Service. Many people spoke for their own interests. At every meeting a record of attendance was kept in order to develop a mailing list for future information dissemination. Approximately 2,500 addresses were on the final mailing list.

D. RECORD OF EVENTS

The following is a list of public meetings, workshops, briefings, and presentations held during the survey scope study. The speakers at these meetings were: Colonel Ray S. Hansen, District Engineer until June 1972; Donald Liddell, Chief of the Planning Branch; Dr. N. E. Hopson, S.U.N.Y. at Buffalo; Barry Pritchard, Cleveland Resident Engineer; Dr. James Speakman, Environmental Engineer; Dr. John Koon, Kent State University; Colonel Robert L. Moore, current District Engineer; Major Charles Myers, Deputy District Engineer; and Ralph Toren of Wright-McLaughlin Engineers.

<u>DATE</u>	<u>SPEAKER</u>	<u>AUDIENCE/LOCATION</u>
18 Jan 72	Col. Hansen	Public (Initial Public Meeting)/Akron, OH
19 Jan 72	Col. Hansen	Public (Initial Public Meeting)/Cleveland, OH

<u>DATE</u>	<u>SPEAKER</u>	<u>AUDIENCE/LOCATION</u>
23 Feb 72	B. Pritchard	Builders Exchange/Akron, OH
24 Feb 72	B. Pritchard	Harry Volk, Exec. Asst. to Mayor Perk/Cleveland, OH
9 Mar 72	D. Liddell	Chamber of Commerce/Akron, OH
13 Mar 72	D. Liddell	Rotary Club/Bradford, PA
4 Apr 72	Col. Hansen	ASCE/Buffalo, NY
14 Apr 72	B. Pritchard	DAR - Western Reserve/Cleveland, OH
20 Apr 72	D. Liddell and Dr. N. E. Hopson	Chamber of Commerce/Mansfield, OH
20 Apr 72	D. Liddell and Dr. N. E. Hopson	Political Leaders/Mansfield, OH
21 Apr 72	B. Pritchard	Ohio Conservation Congress/Columbus, OH
25 Apr 72	B. Pritchard	Rotary Club/Wadsworth, OH
22 May 72	D. Liddell	Goodyear Tire & Rubber/Akron, OH
23 May 72	D. Liddell	Akron Chamber of Commerce, Water Industrial Committee/Akron, OH
23 May 72	D. Liddell	High School Assembly/Cuyahoga Falls, OH
24 May 72	D. Liddell	Firestone Tire & Rubber/Akron, OH
12 Jul 72	Dr. J. Speakman and Dr. J. Koon	Cuyahoga Water Quality Advisory Committee/Cleveland, OH
27 Jul 72	Col. Moore & Dist Staff	EPA (U.S.) Youth Advisory Board Interview/Buffalo, NY
15 Aug 72	Col. Barrett & Dist Staff	County Sanitary Engrs and Planning Commissioner Workshop/Boston Hts, OH
17 Aug 72	Maj. Myers & Dist Staff	Sierra Club interview/Buffalo, NY
24 Aug 72	D. Liddell & Dr. N. E. Hopson	Ohio Farm Bureau Federation/Loudonville, OH
25 Aug 72	D. Liddell & Dr. N. E. Hopson	County Sanitary Engineer & Health Dept./Sandusky, OH

<u>DATE</u>	<u>SPEAKER</u>	<u>AUDIENCE/LOCATION</u>
8 Sep 72	D. Liddell & Ralph Toren	Ohio State University Agricultural staff/Columbus, OH
11 Sep 72	Dr. J. Speakman	Akron City Council/Akron, OH
25 Oct 72	D. Liddell & Dist Staff	Ohio State University Agricultural Staff/Columbus, OH
22 Nov 72	D. Liddell & Dist Staff	Hanna Coal Co./Cadiz, OH
27 Nov 72	Col. Moore & Dist Staff	Planning Commission & others - workshop/Norwalk, OH
28 Nov 72	Col. Moore & Dist Staff	Agricultural Extension Service and local officials and farmers/Bucyrus, OH
29 Nov 72	Col. Moore & Dist Staff	Local officials and citizens/Cadiz, OH
30 Nov 72	Col. Moore & Dist Staff	League of Women Voters and others/Ravenna, OH
4 Dec 72	Col. Moore & Dist Staff	International Pollution Engineering Congress/Cleveland, OH
5 Dec 72	Col. Moore & Dist Staff	City officials/Bucyrus, OH
5 Dec 72	Col. Moore & Dist Staff	League of Women Voters/Cuyahoga Falls, OH
6 Dec 72	D. Liddell & Dist Staff	Cooperative Extension Service/Medina, OH
6 Dec 72	Col. Moore & Dist Staff	Seneca County Regional Planning Commission/Tiffin, OH
6 Dec 72	D. Liddell & Dist Staff	Local officials and citizens/Berea, OH
7 Dec 72	Col. Moore & Dist Staff	Cleveland University Consortium/Cleveland, OH
7 Dec 72	Col. Moore & Dist Staff	Local officials and citizens/Chardon, OH

<u>DATE</u>	<u>SPEAKER</u>	<u>AUDIENCE/LOCATION</u>
12 Dec 72	Col. Moore & Dist Staff	Public meeting/Akron, OH
13 Dec 72	D. Liddell & Dist Staff	Public meeting/Cleveland, OH
14 Dec 72	D. Liddell & Dist Staff	Public meeting/Chagrin Falls, OH
15 Dec 72	Col. Moore & Dist Staff	Environmental Council/Columbus, OH
18 Dec 72	D. Liddell	High School Assembly/Shaker Heights, OH
18 Dec 72	D. Liddell	Rotary Club/Willard, OH
20 Dec 72	D. Liddell	Chamber of Commerce/Bucyrus, OH
20 Dec 72	D. Liddell & Dist Staff	Sierra Club and Izaak Walton League/Cleveland Heights, OH
3 Jan 73	Col. Moore & Dist Staff	County Agricultural Department/New Washington, OH
4 Jan 73	Col. Moore & Dist Staff	Kiwanis Club and Governmental and Business Leaders/Norwalk, OH
25 Jan 73	Col. Moore & Dist Staff	Regional Planning Commission/Galion, OH
1 Feb 73	D. Liddell	Ohio Farm Bureau/Columbus, OH
6 Feb 73	D. Liddell Ohio State DNR Ohio State EPA	Ohio State University Agricultural Staff & County Extension Service people/Bucyrus, OH
7 Feb 73	D. Liddell	Public Utilities Director/Cleveland, OH
8 Feb 73	D. Liddell	Local officials/Willard, OH
10 Mar 73	B. Pritchard	Ohio Conservation Congress/Columbus, OH
21 Mar 73	B. Pritchard	College Club/Cleveland, OH
21 Mar 73	Col. Moore & Dist Staff	Cuyahoga Water Quality Commission/Cleveland, OH

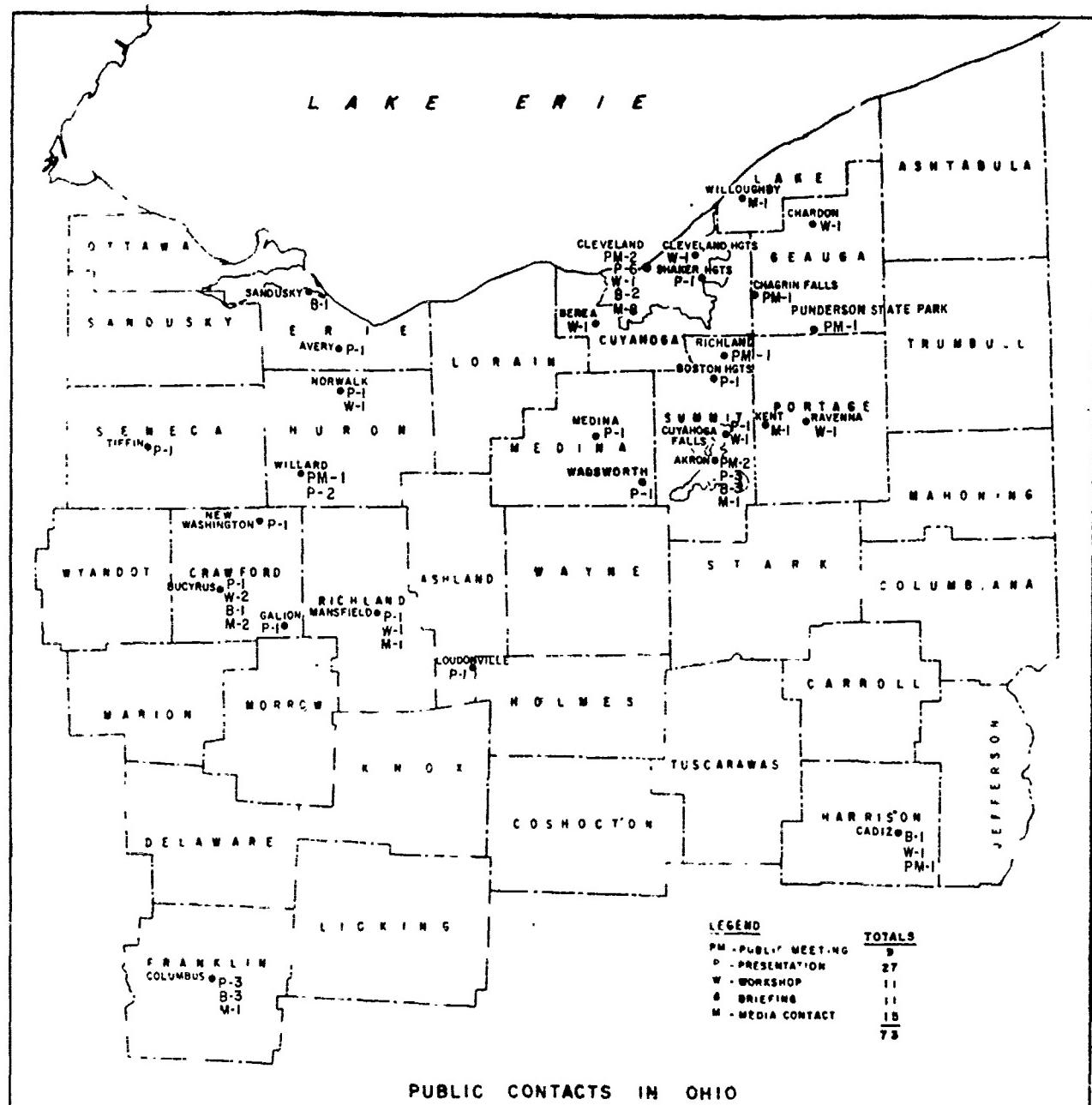


FIGURE VIII-1

<u>DATE</u>	<u>SPEAKER</u>	<u>AUDIENCE/LOCATION</u>
29 Mar 73	Col. Moore & Dist Staff	Young Farmers Association and other interested farmers/Avery, OH
30 Mar 73	Col. Moore & Dist Staff	Consulting Engineers of Ohio/Cleveland, OH
10 Apr 73	D. Liddell	Case Western Reserve Univ./Cleveland, OH
5 Jun 73	Col. Moore & Dist. Staff	Public meeting/Punderson State Park, OH
6 Jun 73	Col. Moore & Dist. Staff	Public meeting/Willard, OH
7 Jun 73	Col. Moore & Dist. Staff	Public meeting/Richfield, OH
8 Jun 73	Col. Moore & Dist. Staff	Public meeting/Cadiz, OH

E. MATERIAL FURNISHED PUBLIC

1. "Wastewater Study - A Comprehensive Wastewater Management Study for Metropolitan Cleveland, Akron and Three Rivers Watershed."

This is a brief pamphlet explaining the purpose of the feasibility study at that stage in the program. It also provided the public with contacts for obtaining further information, through the U. S. Environmental Protection Agency or the Army Corps of Engineers. See Attachment 2.

2. "The Cuyahoga: We've Only Just Begun"

This is a brief pamphlet developed with the State of Ohio for the initial survey scope public meetings and presentations describing the progress made on the Cuyahoga River Restoration Study and the Cleveland-Akron Wastewater Management Study through the feasibility phase. The pamphlet also describes direction of future planning efforts, promises future contact through newsletters, newspaper articles, and public

meetings, and gives the public a means to solicit further information through the State of Ohio and the Corps of Engineers. See Attachment 3.

3. "The Quest for Quality"

This is a 25-page booklet describing the Corps of Engineers involvement in wastewater planning in the Cleveland-Akron Metropolitan and Three Rivers Watershed Areas, the study area, the problems, the solutions and alternatives developed, standards that must be met, how the study had proceeded, and what remained to be done, with emphasis on why the public should participate. It was distributed at all formulation stage formal and informal public meetings as well as at all requested workshops. Some 10,000 copies were printed and about 8,000 have been distributed to date. See Attachment 4.

4. "The Purewater Press" is a wastewater management newsletter that was distributed periodically throughout the survey scope study to field offices of the Corps of Engineers, the Environmental Protection Agency, and interested publics (approximately 2,000+ depending on the issue number). Its purpose is twofold, to inform people of the Corps of Engineers wastewater management involvement, and to provide the public information on current wastewater treatment technologies and other related items of interest. The newsletter did not promote one technology over another. See Attachment 5.

5. Other material

The District also made available portions of working papers and other reports when individuals wrote concerning specific subjects. Most of the requests centered on the land treatment methods. Two of the reports used were:

Assessment of the Effectiveness and Effects of Land Disposal Methodologies
of Wastewater Management by the University of Washington and Wastewater
Management by Disposal on Land by the Cold Regions Research and
Engineering Laboratory of the Corps of Engineers.

Two films were also lent to requesting audiences. The Living Filter is a film produced by the Pennsylvania State University describing results of the ten-year study of land treatment of wastewater and sludge. Wealth from Waste is a film from Great Britain concerning the cooperation of a wastewater treatment facility and farmers for use of digested sludge on farmland. Approximately 30 audiences saw one or more of these films.

F. RELATIONSHIP TO PLANNING PROCESS

This planning study has resulted in a presentation of concepts that will impact greatly upon the population of a large section of Ohio. Thus, public participation in these studies has played an important part in the overall development of this report. Over two million people reside within the boundaries of the Three Rivers Watershed alone. This population is expected to grow to four million or more within the next five decades. Today's planning will therefore, affect many more people than those of today. Also, the decisions will affect not only the people living within the Three Rivers Watershed District but also people in other areas of Ohio. It is for this reason that the expanded public involvement program was carried out.

The public participation portion of this study was developed based upon the experience gained through the earlier feasibility study portion

of the wastewater management programs. The limited amount of public participation during that portion of the study raised many problems outside of the Three Rivers Watershed. Many of the people in those outlying areas did not understand the concepts of the technologies being proposed, and others were not interested in solving the Cleveland area's problems; they had their own. During the current study a considerable effort was made to brief the people in potential land treatment areas to the west of the Three Rivers Watershed and the people in the strip mined counties to the southeast of the Three Rivers Basin.

In addition to the public participation and public views gained through workshops and public meetings, the planning group relied heavily on the comments given during the course of study by the Kent State University evaluation group. Since this group was a multi-disciplined group made up of expertise not only from Kent State University, but also from Akron University and the private sector, these individuals gave an early indication of public sentiment. Their comments relating to strip mine reclamation and land treatment potential in the upper portions of the Three Rivers Watershed played an important part in the formulation of the alternative plans.

The Cleveland-Akron Wastewater Management Study required that seven tasks be performed; identify current and future pollution loads, develop alternative wastewater management systems, evaluate the alternative systems, identify the best alternative systems, study institutional factors, develop potential early-action features, and maintain close

State and local cooperation. Although the tasks must be performed relatively in order, some variation is needed. For example, the final evaluation cannot occur until the alternatives are developed, however, some evaluation can occur while the alternatives are being developed. Public input in early stages helped the development of the alternative plans. The public involvement task is to maintain close State and local cooperation throughout the planning process. The flexible plans developed by the Cleveland-Akron Wastewater Management Study required an open involvement program. Public attitudes to the alternative plans developed in this study are reflected in the evaluation appearing in the Summary Report of this study.

Attachment 6 gives additional documentation.

G. PARTICIPANTS VIEW OF PROGRAM

General

As the study progressed from an initial formulation of many alternatives through the modification phase, and from modified alternatives through the detailing phase, the number of affected people increased and were given the opportunity to make their views known. This caused a concurrent increase in the demand for public involvement. The final study recommendations reflect the views of the public. Public reaction and institutional restraints were vital considerations in selecting alternatives to carry forward.

There were two general groups of people interested in the study: those interested in the study and its implications to Lake Erie, the

Three Rivers Watershed, and the Cleveland-Akron area, and those interested in the study because alternative implementation would affect them.

Those interested in the study and its implications to Lake Erie, the Three Rivers Watershed, and the Cleveland-Akron area provided study input and encouraged public participation.

The League of Women Voters at Kent, Northeast Portage County, Cuyahoga Falls, the Three Rivers Group of Northeast Ohio, and the Lake Erie Basin Committee expressed general opinions about the types of treatment technologies studied and encouraged public participation.

They approved many aspects of the study. They supported the study's innovative ways of handling wastewater and the concept of recycling of nutrients. They agreed that the consideration of a large number of alternatives was needed and that public participation was an important aspect of the study. The groups recognized the multiobjective planning potential of the study, i.e., water supply, recreation, and wastewater management collectively. Most of them expressed concern about transporting water out of the Lake Erie Basin and potential groundwater contamination from the land disposal alternatives. They were also aware of the current problems concerning septic tanks, and expressed the hope that these would be solved.

The League of Women Voters at Kent and Northeast Portage County should be specially recognized for their efforts in establishing a public opinion workshop for their area and transmitting the results to Buffalo District. The Citizens for Land and Water Use in the Cleveland Metropolitan area and the Cleveland University Consortium made similar workshop efforts. The State of Ohio Department of Natural Resources and Environmental Protection Agency attended workshops to gather public opinion in addition to their coordination efforts. The Sierra Club and the Izaak Walton League expressed their interest in environmental quality and organized a workshop. The Ohio Environmental Council sponsored a workshop in Columbus that may beneficially impact upon future urban study efforts in the State of Ohio. The Cuyahoga Valley Association is most interested in conserving and improving the Cuyahoga River Valley, and water quality is one of their major concerns. They participated in workshops and announced study progress in their newsletter.

The Three Rivers Watershed District was a major participating organization. In addition to being a member of the Interagency Coordinating Committee, the District provided valuable review of the study and suggested new considerations. The District had representatives at many of the workshops and all the public meetings and helped set up several workshops and briefings.

Various regional planning commissions contributed to the public involvement phase of the study. These included the Cuyahoga County Regional Planning Commission, the Lorain County Planning Commission,

the Tri-County Regional Planning Commission which provided inputs on local problems and attended study workshops, the Lake County Planning Commission, the Cleveland City Planning Commission, the Geauga County Planning Commission which participated at several stages during workshops, the Akron Department of Planning and Urban Renewal, the Akron Public Utilities Department, and the Cleveland Department of Public Utilities. The city of Akron and the Cuyahoga River Water Quality Committee also assisted in providing study input.

The second general group of people involved in the study effort are those affected by potential implementation of project alternatives. In general, a favorable reaction exists to the reuse of sludge in strip mined areas regardless of its origin, and a negative reaction exists for areas where spray irrigation of treated wastewater from the Cleveland area is a portion of an alternative. The latter caused the study group to become aware of the importance of institutional restraints, and how they may affect or become a part of the decision making process. Many of the people fitting this general classification misunderstood the scope of the feasibility study, but this was not completely undesirable. This misunderstanding resulted in specific requests for briefings at which time the study group was able to personally explain the land treatment alternative. An appropriate example is the Mansfield Chamber of Commerce. They first wrote the District office and asked for a copy of the feasibility report. After reviewing its contents, the Chamber of Commerce took an official stand against application of secondarily treated effluent on Richland-Ashland County sites because of health hazards, high electricity requirements, limitation on crop variety,

abandonment of residential and commercial property, and elimination of recreation areas and scenic parts of the State. These specific disadvantages were listed in the feasibility study report when land disposal was recognized as a viable wastewater management alternative in the Cleveland-Akron area. The land disposal alternative was referred to in local papers as the "Leach-Bed" concept. The Chief of Planning Branch, Buffalo District, presented the land disposal alternative to three interest groups in the Mansfield area; the Chamber of Commerce, the news media, and locally elected officials. Their concern was not as originally anticipated. It surfaced at the meeting as being along the line of "Why should we suffer for the Cleveland-Akron area?" They realized that the land disposal alternative was a viable one and that it should be considered for their own wastewater.

Concerns of Residents of Northcentral Ohio

There are a number of major concerns to the people of Northcentral Ohio regarding the Wastewater Management Study. The problems center on land treatment in the area; the residents particularly oppose the acceptance of Cleveland effluent. A part of the problem is the psychology associated with acceptance of human waste, although treated, on crops. If the problems of land treatment are not overcome, land treatment in the Northcentral area of Ohio will remain impossible. The present nonacceptability can be explained by discussing the various specific concerns.

The first concern is both public and institutional and has to do with what agency will control the total regional wastewater system. This applies to other technologies as well. As long as the total system is within the Three Rivers Watershed Basin, the institutional concern is minimized. An agency such as the Three Rivers Watershed District could be given the necessary authority and responsibility to either monitor the compliance with an overall plan with execution by local government or be given total responsibility for execution. The regulation, operation, and maintenance standards can be provided in ordinances, in procedure manuals, or by strict policing of the system by a central agency. For those plans that have a portion of the system outside the Basin, this institutional problem becomes more complex. If the effluent is to be "manufactured" in one area and transported across counties to another area, someone must be assigned jurisdiction over that portion of the system. No local agency exists today with that wide a jurisdiction short of the State of Ohio Department of Public Works. The quality and timing of the effluent or raw sewage received in the Northcentral area must be compatible with their capacity to manage it on the land and in the storage basins. On the other hand, someone must insure that the Northcentral area is handling the effluent at a satisfactory rate such that it will not impact upon the reliability of total use of the system.

The second concern is with the transport of effluent from Cleveland to the Northcentral area. The evaluators claim that if transport is

necessary, a tunnel excavated by a machine called a "mole" is the best approach. They see no problems if secondary effluent is carried. They do point to the possibility of creating conditions harmful to the pipe structure as well as septic in nature if it carries raw sewage. These can be overcome through proper engineering of the tunnel to allow for lining the tunnel as well as aerating along the route. The public has expressed similar concerns as well as a concern for the cost of this tunnel. The cost is high but is included in the total cost of the land alternatives requiring a tunnel. Even with this cost, pure land treatment seems to be a least-cost option.

The third concern is for the use of aerated lagoons, which might treat raw sewage, and has been expressed both by the evaluators and the public. The evaluators question the reliability of the aerated lagoon to produce secondary quality effluent under all conditions, few of which are under the control of the operator. As long as aerated lagoons are designed to precede land treatment, reasonable variations in effluent quality can be sustained without affecting the quality of the water in the under-drain system or in the soil since the lagoon effluent tends only to apply more organics to the soil. The public is concerned with the possible odor, and this cannot be totally eliminated. However, good design, operation, and maintenance can minimize odors. Odors could occur with any technology given poor maintenance, operations, or design. Wooded areas can be constructed around the lagoons as well as the storage areas to provide a natural shield from the odor. Safety from drowning can

also be provided by fencing the areas.

The fourth concern is over the location, in one area, of all the lagoons, storage areas, and land required. Both the public and the evaluators question the social acceptability of using one large land mass in the Northcentral area. The evaluators further stress that this restricts future growth of the system to allow the inclusion of wastewater from communities within the Northcentral area in the system. The use of large land mass is only called for by cost considerations and does not appear the most feasible nor most acceptable way to design a total land system. It is used in the effort to provide a least-cost option for this technology. In the final design and construction of any land system, considerable attention should be given to increasing costs to allow for the design and configuration of smaller land areas for use. If the ultimate value of land treatment is the total recycle of nutrients and this recycle is necessary to protect the future environment, cost should not dictate the use of massive single area application. If smaller areas are more acceptable, the decision should allow for incorporation of smaller areas at greater cost. The benefits of industrial use and electrical power use of these storage ponds as water supply sources and cooling ponds should pay for the added costs. Further, the evaluators point out the possibility of boating and fishing. The two greatest deterrents to recreation are a low dissolved oxygen level and algae growth in the ponds. These could be limited or eliminated by artificial aeration for dissolved oxygen and by physical separation

of ponds and operation in series to reduce the algae in the downstream pond. Such methods have not been costed and may well not be needed; experience will show the extent of their need.

The fifth concern is contamination of the soil by heavy metals or nutrient buildup in the soil, again a concern expressed by both the evaluators and the public. The heavy metal buildup problem is remedied by the selection of either the pretreatment option (Option 3) or recycle option (Option 2) by industry. This study will use the pretreatment option but allows industry to choose the recycle option at their discretion. With this requirement upon industry, heavy metals (including cadmium and mercury) will be removed prior to land application or release to a municipal system using any technology. The nutrient buildup is reduced or eliminated by selecting proper soils and crops and suitable application rates. The need for proper soils is the element that caused the study effort to consider the Northcentral areas. A good soil-crop-consumer cycle must be achieved to provide continued recycling of the by-products. Application rates must be geared to the soil conditions and crop uptake capacity. This can be achieved by proper design. Ohio State University conducted an agricultural evaluation included as Appendix IX.

The sixth concern is application rates. The planning effort throughout its phases has examined rates between 26" and 75" of effluent per year for municipal and 26" and 150" per year for stormwater

treatment. The infiltration rate and permeability of the soil coupled with the ability of the till or natural drainage slope to carry the effluent away is critical to addressing this concern. Three general types of soils are used:

<u>Soil</u>		<u>Hydraulic Capacity</u>		
<u>Association</u>	<u>Location</u>	<u>inches/hr</u>	<u>inches/day</u>	<u>Acceptance</u>
Chili	In Basin	0.2 to 6.3	48 to 150	30wk Max. Application 10,800"/yr
Mahoning/Ellsworth	In Basin	0.06 to 0.2	1.4 to 4.8	294"/yr
Cardington/Bennington	Northcentral	0.02 to 0.63	4.8 to 15	1,008"/yr

This depicts the maximum application rate for a 30-week year and using the minimum hydraulic capacity of the soil. It means that the soil is capable of passing that much water provided the water is not applied at a rate greater than the minimum hydraulic capacity and that the drain tile is capable of carrying off that much water. The spacing, sizing, slope, and pumping can be designed to meet any required outflow. Therefore, the system will drain totally; the weakest element in the system is the crop. These applications represent irrigation for the 30-week growing period. Ample drying time is provided daily by sprinkling only three times daily with not less than seven hours between sprinklings. The rate of application allows for nonsprinkling during rainfall periods. The rates used are as follows:

<u>Soil Association</u>	<u>Effluent</u>	<u>Application Rate</u>	<u>Crop</u>
Chili	Municipal & Industrial	60"/yr	General
Mahoning/ Ellsworth	Municipal & Industrial	90"/yr	Grass
	Stormwater	150"/yr	Grass
Cardington/ Bennington	Municipal & Industrial	75"/yr	Corn or Grass
	Municipal & Industrial	50"/yr	Hay
	Municipal & Industrial	90"/yr	Grass

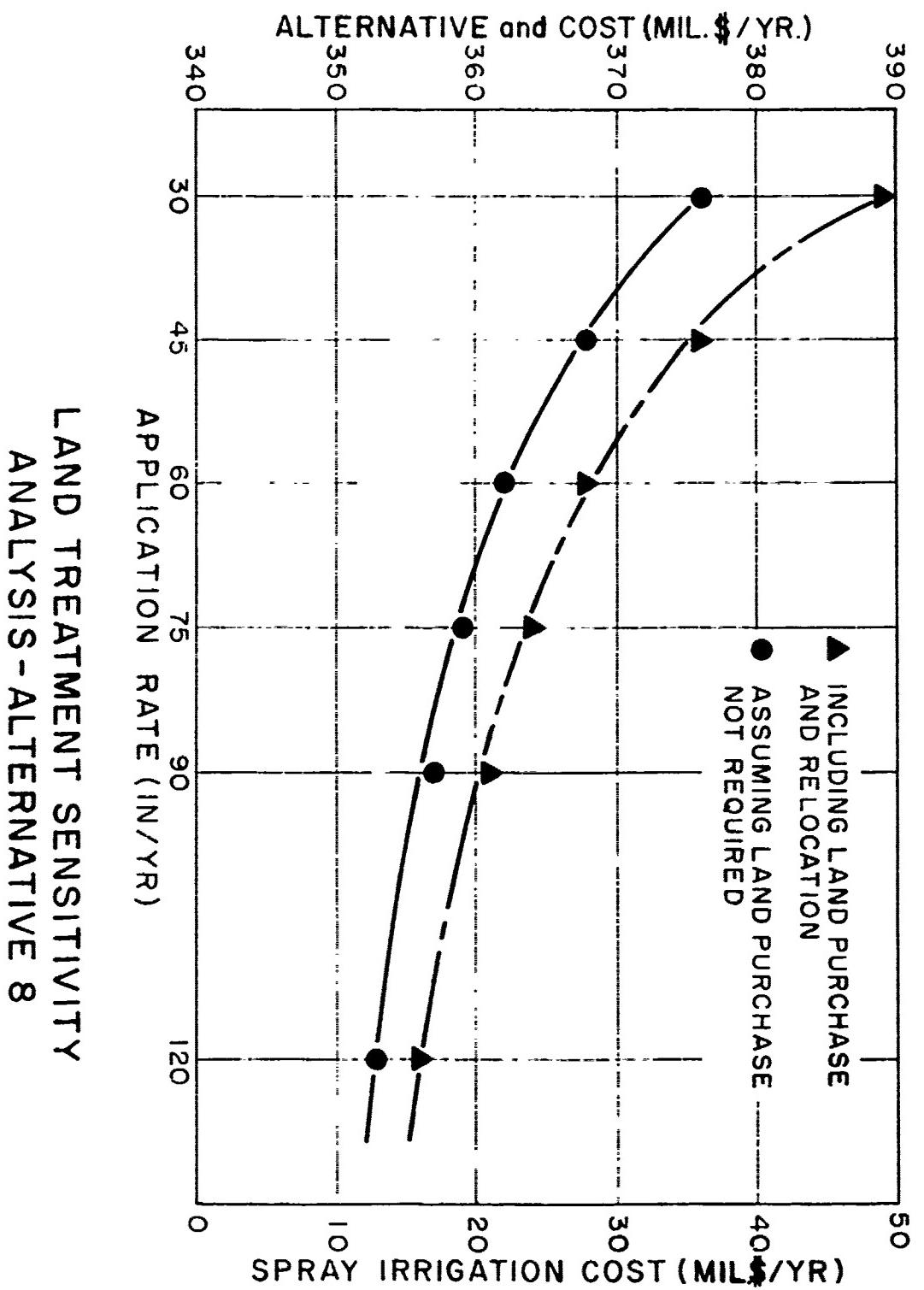
In the Part II report on Plan Formulation, application rates averaging 68" per year were discussed for the Northcentral area. This application rate, although acceptable to the soil from an engineering point of view, is not yet acceptable to the farmer largely because of the current effects of high rainfall. The only means to prove whether or not the soil and crops will withstand these applications is through early-action demonstration projects. Crop patterns would probably have to change to achieve the higher rates. This change, too, must be examined for acceptability and accuracy prior to full implementation of any land alternative. There is no discussion as to the ability of the soil and crop to withstand not only the effluent application but also the rainfall. Any change back to current cropping patterns or reduction in application rates to allow additional safety factor for years of high rainfall, or both, will increase the cost of

the land alternative. Figure VIII-2 demonstrates the relationship between application rate and average annual cost for Plan 8. Since we are dealing with a very simplistic land mass diagram, what goes out to the North-central area must be applied on the ground. Excess storage could be provided to allow for increased storage requirement during years of high rainfall with increased application rates during years of low rainfall. The average annual rainfall for the study area is 34 inches per year, fluctuating from 32 inches per year in the north to 37 inches per year in the south. The most rainfall of record in the Northcentral land treatment area from 1930 through 1966 is recorded at Bucyrus in 1937 as 55.48 inches. The rainfall in the area in 1972 was about 52 inches at Plymouth with nearly 30 inches in the last six months. These records are climatic summaries for Ohio published by the U. S. Weather Bureau. The area receives rain on the average of once every three days and application would not be accomplished during those periods. Further, application would not be accomplished during planting and harvesting time with a period of drying allowed prior to harvest. It is believed that the application rate and crop pattern can be shown to be satisfactory or changed to be satisfactory through demonstration and testing with monitoring of the results.

The seventh concern is that of the necessity to change existing crop patterns and farming practices. The farmers in the Northcentral area expressed a reluctance to change crops or farming practices without proof that a market existed for the new crops and that changing farming

practices would provide greater crop yield. Changes in crops and farm practices are needed where application rates are increased. The reason for increasing application rates is to reduce the land required. Other changes in crops may be necessary to avoid irrigating direct consumption crops. Sufficient land is available to reduce application rates from those discussed in the land treatment alternatives. However, the cost increases as the land requirement increases; more equipment, more people, and more tile drainage are required. Again, if land treatment provides a total recycle; then, not cost, but environmental benefit should govern its selection as an alternative. This planning effort, since its beginning, has examined application rates ranging from 26 to 150 inches per year. Only experimentation by land type will prove finally what agricultural methods, crops, and application rates will be viable and can be designed to be acceptable to the farmer as well as the sanitary engineer; they must both work together to attempt to achieve a workable combination through research and experimentation. The health departments and Federal Environmental Protection Agency should be included as members of that research and development team.

The eighth concern deals with ownership of the land and is a concern of the evaluators and, obviously, the farmer. Although all costs in this report are based on the assumption of procurement of the land by local or State authority, that assumption was made purely to provide conservative cost estimates. Figure VIII-2 shows the cost of Plan 8 with and without land purchase. The only way to proceed with



LAND TREATMENT SENSITIVITY
ANALYSIS - ALTERNATIVE 8

FIGURE VIII-2

land treatment is through a cooperative effort between the farmer and the sanitary engineer. Land treatment cannot be successful without the marriage of farm practices and sanitary engineering practices if one is to achieve total recycle of nutrients. Land treatment is an answer to the loss of nutrients. It is estimated that the readily-identifiable equivalent crop fertilizer market value of the nutrients in the effluent of the study area approaches \$10 million annually for 2020 flows.

Today this fertilizer equivalent is being placed in the streams without recovery and is one of the principal contributors to the algae problems of Lake Erie. The easiest way to return these to the soil without expensive pretreatment, shipping, and application costs is by land treatment.

The ninth concern has to do with the flooding of rivers in the Northcentral area by the introduction of increased water supply through irrigation. This problem is discussed in great detail in Appendix V. The conclusion is that the added water will add no more than 15 percent to the mean annual peak flows. Irrigation normally would not occur during the period of the year that high flows occur. However, the planners do caution that an early storm warning system and river gage monitoring system is needed to provide warning to shut down the land system in sufficient time so as not to add to a predicted or projected flood problem. Most flood problems in the area now occur during the non-growing season and should not be affected by irrigation schedules.

The last major concern is the contamination of groundwater by the effluent flows. This problem is discussed in Appendix V and concludes through research that an underground contamination problem will not occur with appropriate design and system management. The planner indicates that some underground water has been contaminated by using underground caves or wells as storage for wastewater. These caves could be pumped out and the contaminated water could be used for irrigation; only grass areas can be used since the water is contaminated. This practice would eventually clean up the contaminated groundwater.

Most of the concerns can be taken care of through proper design and management of a land system. The concerns are real. Only two actions can thoroughly resolve the concerns. They are education of all concerned people and early-action programs within the basin as well as in Northcentral Ohio area to gain acceptance of the technology and its advantages as well as prove out the design factors used. Not much concern exists within the basin, but the concerns are great enough in the North-central area to possibly kill land treatment forever. Regardless of whether Cleveland effluent is ever taken to the Northcentral area, certainly land technology offers the people in that area the best and least-cost option to their own critical wastewater management needs.

Other

There were some problems with the sludge reuse concept, but these were overcome when the local people became involved. The proposal for sludge reuse was not a new concept for Harrison County, OH. It was

proposed as early as 1955. However, through the efforts of Buffalo District, the Muskingum Conservancy District, Hanna Coal Company, and open-minded local citizens, acceptance of this proposal appears a definite possibility.

Bucyrus is the County Seat of Crawford County and is located about 100 miles southwest of Cleveland. The City is located in an area well suited to land treatment because of the types of soils in the region. At a workshop/presentation meeting in November 1972, there was some skepticism as to the desirability of fertilizing the farmlands around Bucyrus with Cleveland's treated wastewater. However, following a briefing shortly thereafter, the City began to actively consider using land treatment for their own wastewater. The City has since contacted the Ohio Environmental Protection Agencies and other Federal and State officials in an effort to obtain an early-action pilot project for Bucyrus.

As a result of public inputs and concerns from the citizens affected by land treatment, the Buffalo District contracted with the Ohio Agricultural Research and Development Center of Ohio State University to review and comment on the agricultural aspects of the wastewater study. Appendix IX contains their report.

Throughout the public participation program, the State of Ohio Department of Natural Resources provided immeasurable assistance.

Staff attended meetings, lent information from previous study efforts in the affected area, and helped review the study in light of the needs and desires of the people of the State of Ohio.

Attachment 7 gives additional documentation. Transcripts of the four Final Public Meetings are Attachments 10 through 13.

ATTACHMENTS

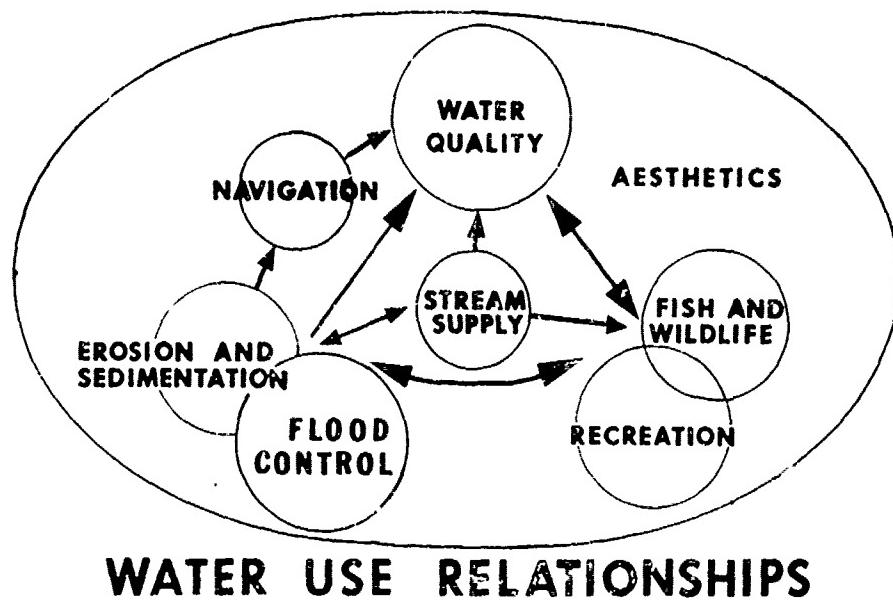
1. Sample Wastewater Presentation
2. "Wastewater Study - A Comprehensive Wastewater Management Study for Metropolitan Cleveland, Akron and Three Rivers Watershed." (Original inclosed in draft report)
3. "The Cuyahoga: We've Only Just Begun." (Original inclosed in draft report)
4. "The Quest For Quality." (Original inclosed in draft report)
5. "The Purewater Press," Number One, Two, Special, and Three.
6. Documentation Related to Section F
7. Documentation Related to Section G
8. Correspondence, Statements, Responses
9. Representative Newspaper Articles
10. Notice and Handout Material For Final Public Meetings
11. Representative Newspaper Articles Relating to Final Public Meetings
12. Transcripts of Final Public Meetings
13. Correspondence Resulting From Final Public Meetings

ATTACHMENT 1

**SAMPLE WASTEWATER PRESENTATION
FROM THE FORMULATION STAGE OF THE STUDY**

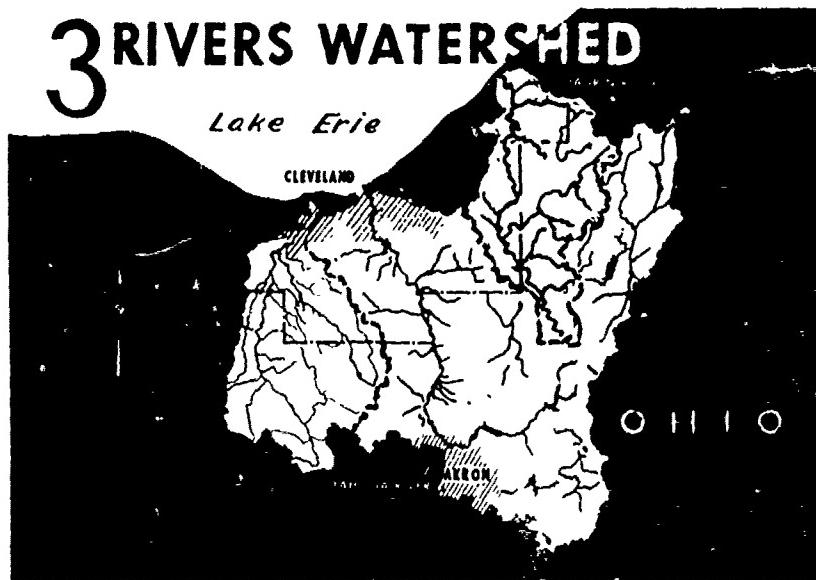
WASTEWATER MANAGEMENT AND CUYAHOGA RIVER RESTORATION

During the past year, the Buffalo District, Corps of Engineers, has been involved in two studies which affect north-east Ohio. They are the Cuyahoga River Restoration Study and the Alternatives For Managing Wastewater in the Cleveland-Akron Metropolitan and Three Rivers Watershed Areas. One effort should not be completed without the other. We need to look at the River Basin as a total ecosystem. The two efforts differ in their scope, but are closely related. The Cuyahoga Study deals with water quality, recreation, stream supply, fish and wildlife, flood control, erosion and sedimentation, aesthetics and navigation as shown on this chart.



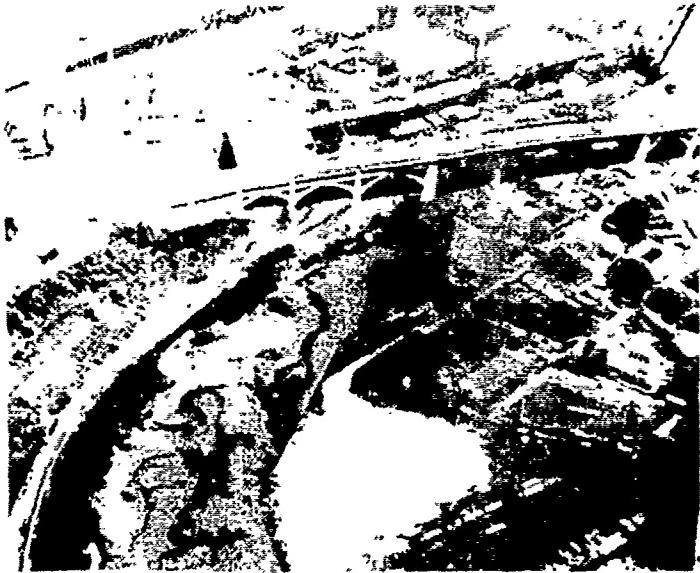
The Wastewater Management Study deals with the treatment of municipal and industrial wastewaters and urban stormwater runoff entering the streams. However, it certainly affects the results of the Cuyahoga Study since dividends of Wastewater Management are better quality of water as well as flood protection.

3 RIVERS WATERSHED

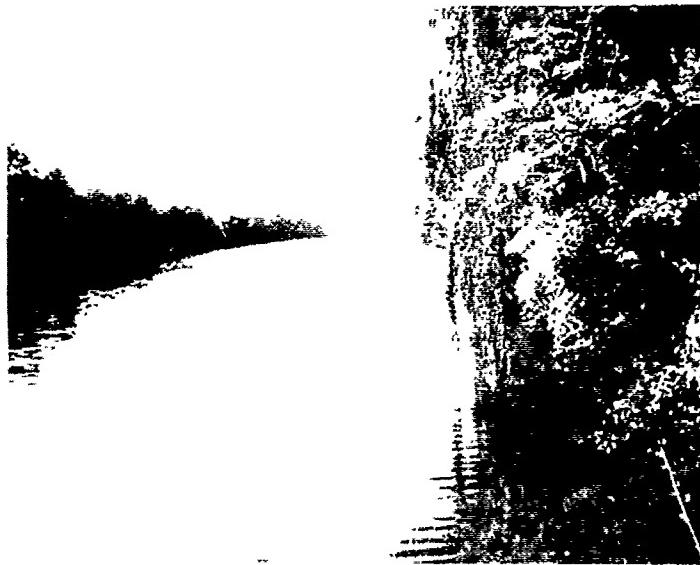


The areas of the two studies encompass approximately 1,500 square miles and about 2.5 million people. The area is about 23% urbanized with the major concentrations around Cleveland and Akron. There are large amounts of heavy industry in the Basin with metal and chemical in Cleveland, and rubber in Akron. The Rocky River Basin is on the left the Cuyahoga in the center and the Chagrin in the upper right.

The Cuyahoga has gained a reputation of dubious value, that of being a national disgrace -"The River That Burns." In its lower reaches, the Cuyahoga has definite problems. The lower end of the river does justice to the national attention it has received. Heavily populated and highly industrialized, population, contributions from Akron and Cleveland and a number of smaller communities just do not give the Cuyahoga an opportunity to cleanse itself prior to discharging into Lake Erie.



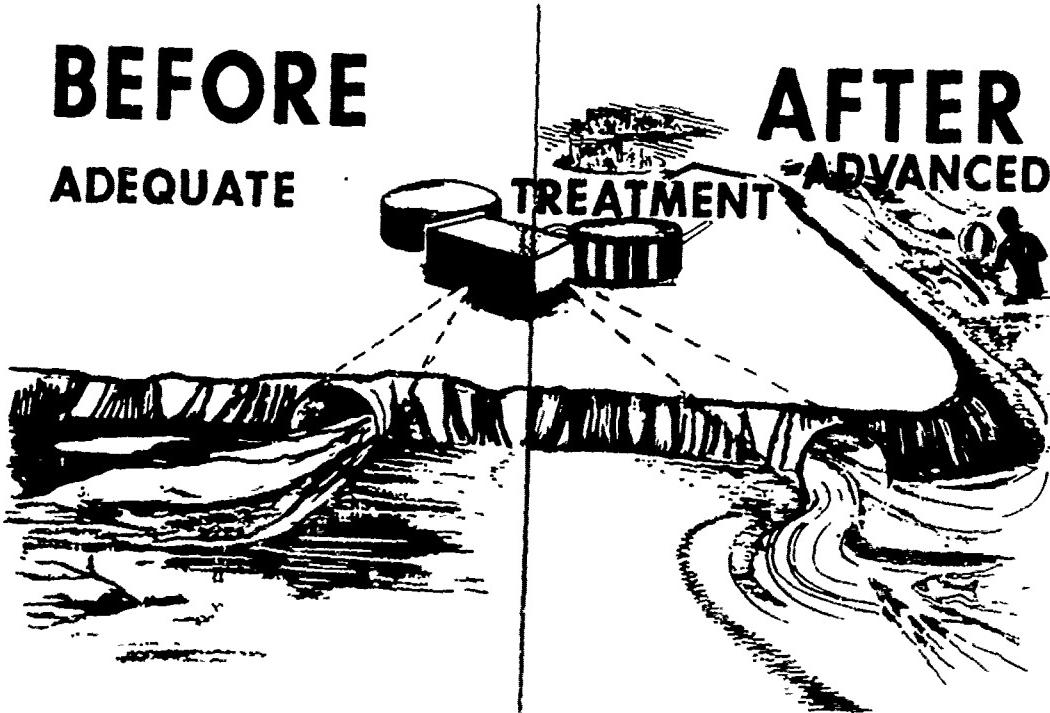
The lower Cuyahoga River, in particular, the navigation channel, is the part of the river that people outside of this area feel is characteristic of the entire river. The river at times looks more like a dirt road sprayed with oil than the mouth of a stream flowing through a scenic Ohio valley system.



Those of us who know the Cuyahoga, however, realize that it is not all bad; that in fact, at times, it has great beauty and charm. In recent weeks I have walked with my ecologist over many reaches of this river and I can attest to its beauty. Almost half of its one hundred and ten miles is still close to natural state. Its upper watershed is only sparsely populated and only lightly developed, and strong efforts are being made by many local people to keep it that way. Still, even here, there do exist water quality problems, some bottom sediment problems, and erosion problems that affect this region, as well as downstream.

BEFORE ADEQUATE

AFTER ADVANCED



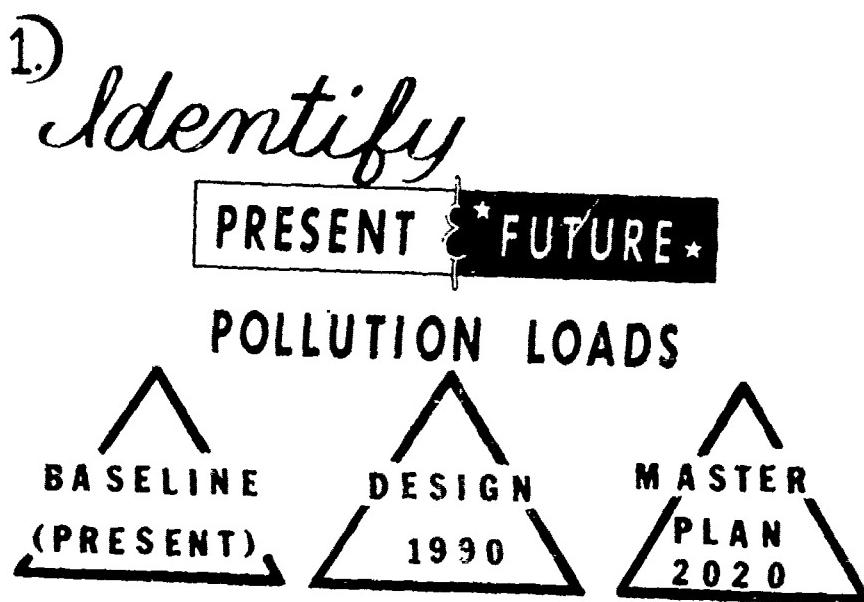
We need to keep in mind as we come to a discussion of the Wastewater Management effort that good wastewater treatment is required to make certain we achieve maximum benefits in a look at the total ecosystem called the Three Rivers Watershed.

Now, turning to Wastewater Management, this effort has been somewhat misunderstood. The Buffalo District is providing a planning service to the State of Ohio. The product of this effort will be a plan or set of plans to be selected by two evaluation processes and offered to the State for implementation. No plan unacceptable to the State or local authorities or the public need be included as a final alternative. The entire rationale used in selecting the final plan or plans will be spelled out in the planning documents provided to the State. The Environmental Protection Agencies, both Federal and State, have been involved in the coordination process.

SURVEY STUDY

1. IDENTIFY POLLUTION LOADS.
2. DEVELOP ALTERNATIVES.
3. EVALUATE ALTERNATIVES.
4. IDENTIFY BEST ALTERNATIVE(S).
5. STUDY INSTITUTIONAL FACTORS.
6. DEVELOP EARLY ACTION.
7. CLOSE STATE & LOCAL COOPERATION.

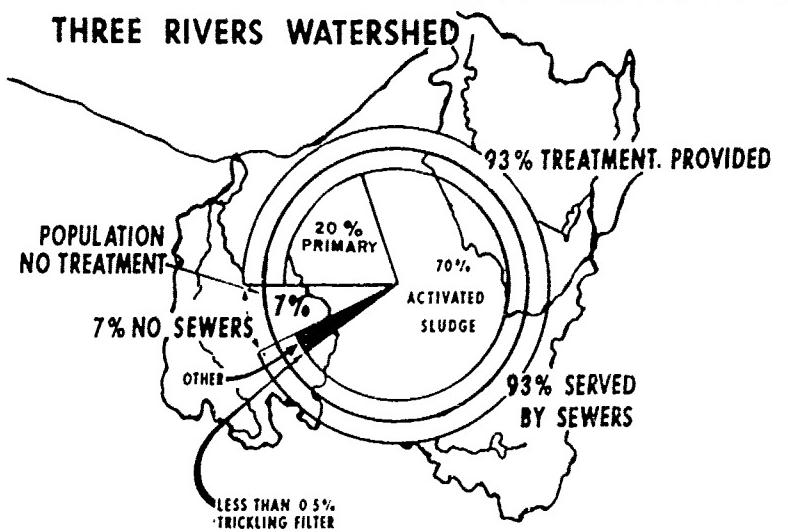
This chart lists the seven tasks which define the scope of our planning effort. These form the outline for the remainder of my discussion, and I will discuss our progress against each task separately.



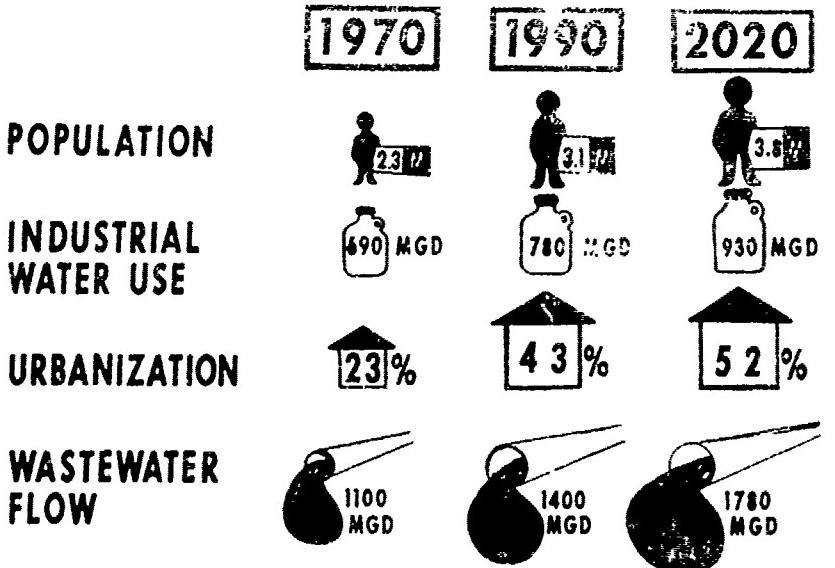
We have been asked to identify the present and future pollution loads, and have done so. We will design to the 1990 loads and plan for 2020.

CURRENT TREATMENT METHODS

THREE RIVERS WATERSHED



Twenty percent of the population is receiving only primary sewage treatment. Seventy percent of the sewage is receiving secondary treatment by the activated sludge process. Even though the overall treatment is better than the country-wide average, there are a lot of pollutant materials being discharged into the streams. So far there has been very little treatment of stormwater runoff.



The continuing increase in population and its accompanying increase in supporting industry will cause today's problems to become worse. The 70% increase by 2020 is almost directly evident in the projected wastewater flows.

WASTE LOADS GENERATED WITHIN THE STUDY AREA			
	1970	1990	2020
AREA (ACRES)			
URBAN	225,000	416,200	499,100
RURAL	739,400	548,200	468,300
TOTAL	964,400	964,400	964,400
FLOW (MGD)			
DOMESTIC	313	463	626
INDUSTRIAL			
PROCESS	533	610	723
COOLING	158	166	203
URBAN RUNOFF	97	171	224
RURAL RUNOFF	216	160	136
TOTAL	1317	1870	1914
BICHEMICAL OXYGEN DEMAND (LB/DAY)			
DOMESTIC	335,290	519,180	606,230
INDUSTRIAL	205,760	327,510	347,870
URBAN RUNOFF	36,190	37,130	52,330
RURAL RUNOFF	5,840	4,320	3,470
TOTAL	673,080	882,150	1,109,320
SUSPENDED SOLIDS (LB/DAY)			
DOMESTIC	470,920	671,830	846,610
INDUSTRIAL	2340,040	2,747,010	3,121,130
URBAN RUNOFF	197,420	282,940	377,370
RURAL RUNOFF	368,610	273,290	232,020
TOTAL	3,398,990	4,676,070	4,777,130
PHOSPHOROUS (AS P) (LB/DAY)			
DOMESTIC	25,100	35,700	42,370
INDUSTRIAL	4,380	4,910	5,260
URBAN RUNOFF	2,880	3,400	3,950
RURAL RUNOFF	360	270	220
TOTAL	32,720	44,300	52,800
NITROGEN (AS N) (LB/DAY)			
DOMESTIC	52,580	74,800	92,480
INDUSTRIAL	17,840	19,870	22,440
URBAN RUNOFF	5,230	7,150	8,910
RURAL RUNOFF	3,390	2,680	2,270
TOTAL	76,240	104,480	126,100
CHLORIDES (LB/DAY)			
DOMESTIC	71,730	110,420	141,710
INDUSTRIAL	92,420	109,050	123,810
URBAN RUNOFF	111,160	194,270	206,400
RURAL RUNOFF	107,900	80,010	67,900
TOTAL	383,210	493,730	623,840

This population increase also affects pollutant loads. These loadings are the gross amounts developed in the basin and do not reflect current or future treatment processes. Greatly enlarged treatment facilities will be needed to treat the growing loadings and these facilities will have to be more effective and reliable to meet the demands for greater water recreation opportunities, better overall environment and less danger to public health. Industrial wastes are being addressed. Rural runoff is a significant contributor to only suspended solids. Agricultural pollution loadings are trending downward and so we are concentrating our efforts in the study on the municipal, industrial and urban runoff loadings where the problems are increasing. There are some nonstructural actions that could reduce these projected loadings. One example is in the chlorides where decisions are being made to reduce the application of salt to streets because of its environmental effects. Phosphates in detergents are being banned or reduced in some parts of the country. Better farming practices will reduce the suspended solid loads from rural runoff. Therefore, our efforts do not include treatment of rural runoff. We propose that the rural problem be handled by nonstructural means.

2.

DEVELOP REGIONAL ALTERNATIVES TO:

- MEET WATER QUALITY GOALS,**
O EXISTING STATE STANDARDS.
O NO DISCHARGE OF CONSTITUENTS
AT CRITICAL LEVELS.

MAXIMIZE REUSE POSSIBILITIES.

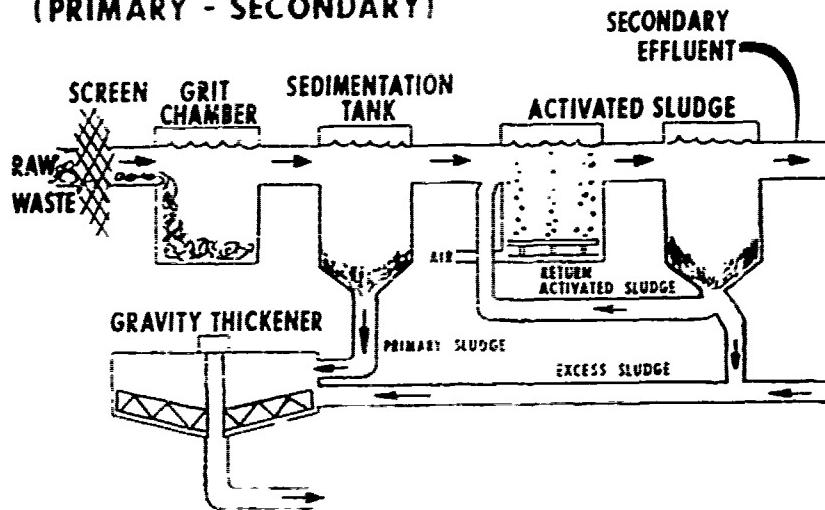
The effort will address two different sets of standards. Each of these will maximize the reuse of all by-products of the treatment cycle.

EXAMPLE STANDARDS

CONSTITUENT	OHIO EFFLUENT	NO DISCHARGE OF CRITICAL CONSTITUENT
SUSPENDED SOLIDS	5-30 DEPENDENT ON SEASON & DILUTION	2
BIOCHEMICAL OXYGEN DEMAND	5-30 DEPENDENT ON SEASON & DILUTION	2
PHOSPHOROUS	1.0 (AS P)	0.05 (PO ₄)
AMMONIA NITROGEN	2-10 DEPENDENT ON SEASON & DILUTION	0.1
TOTAL DISSOLVED SOLIDS	500	500
HEAVY METALS	0.005-5.0 DEPENDENT ON CHEMICAL SPECIES	ABSENT

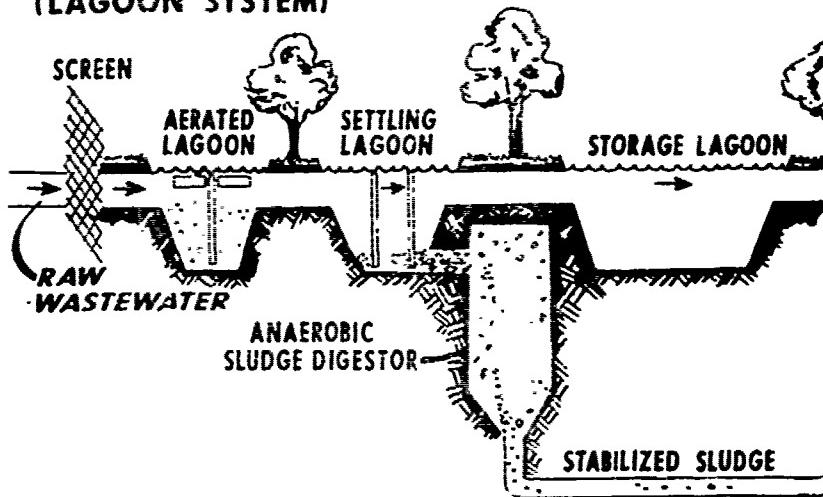
The two sets of standards are composed here and you can see there is a discernible difference. The new standards require the removal of appreciably more nutrients, dissolved solids, and heavy metals. There cannot be removed in existing sewage plants. Advanced treatment is required.

BASIC WASTEWATER TREATMENT (PRIMARY - SECONDARY)



The primary-secondary system currently in use the most throughout the area is depicted on this chart. I don't want to get into a discussion of the system. It is called activated sludge because of the final process. There are other ways of obtaining primary-secondary treatment, as you know.

BASIC WASTEWATER TREATMENT (LAGOON SYSTEM)



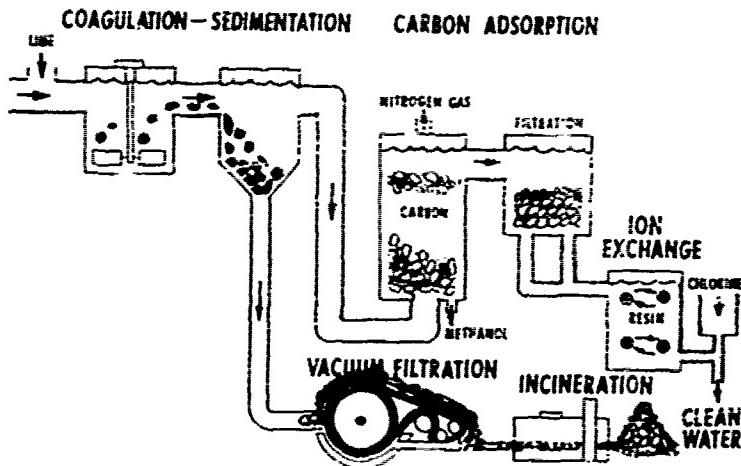
This chart depicts a method called aerated lagoons. The degree of cleanliness of the effluent coming from all the primary-secondary processes is about equal to that of the activated sludge process.

Consideration should be given to the following when selecting one of these methods:

- Less land area is consumed with activated sludge processes
- Local treatment reduces odor and maintenance problems to tunnels, pipelines, and pumps
- System reliability is improved through early local treatment
- Local activated sludge plants improve scheduling
- A system utilizing local secondary treatment results in a minimum waste of past investment
- The local activated sludge treatment system may be acceptable from a public standpoint
- No sludge will be available for strip mine areas

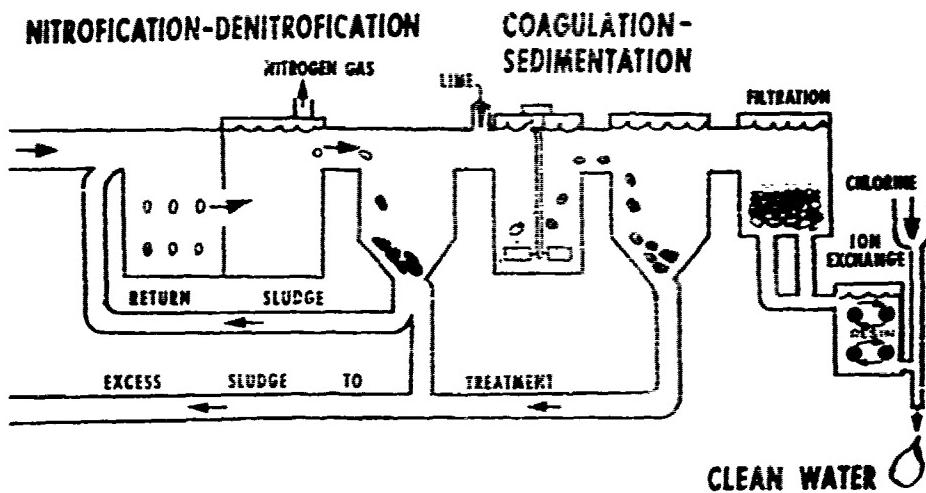
-Now, I can use any system of primary-secondary treatment, and then use of either of the following processes for advanced treatment to meet the required new standards. This is important because it indicates that in a land treatment alternative, I can utilize existing plants for initial treatment and pipe their effluent to land for final treatment. In this manner I can defer the building of new plants or aerated lagoons until the existing plants wear out.

ADVANCED WASTEWATER TREATMENT (PHYSICAL - CHEMICAL)

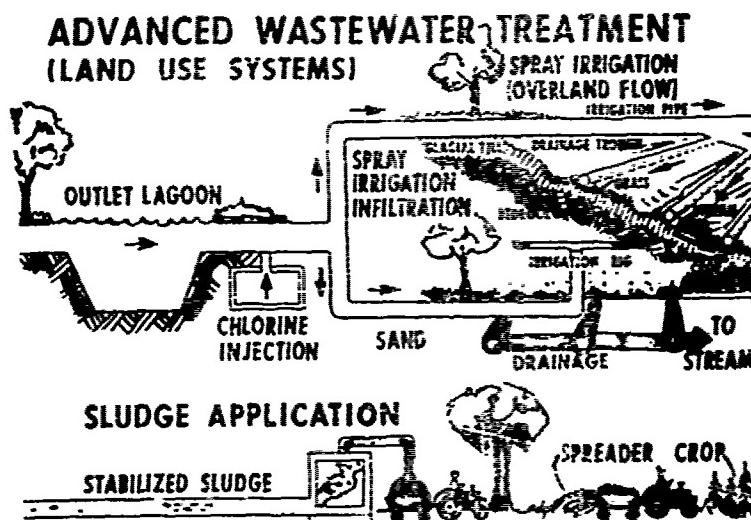


Final treatment can be provided by advanced water methods or land methods. This chart shows one method of water treatment called physical-chemical. Again, I will not explain the process. There is some air pollution involved since incineration is the only available way of recovery of treatment chemicals.

ADVANCED WASTEWATER TREATMENT BIOLOGICAL

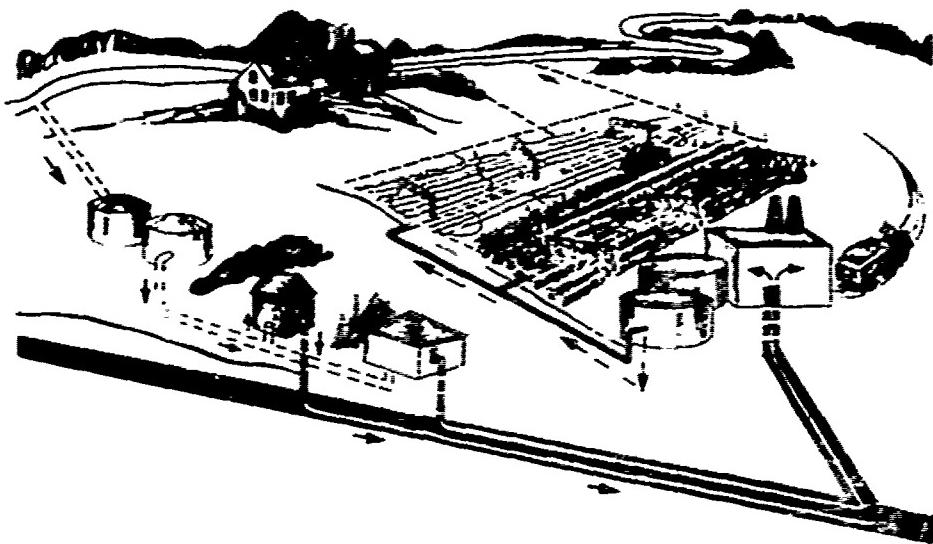


Another method of water treatment is advanced biological, shown on this slide.

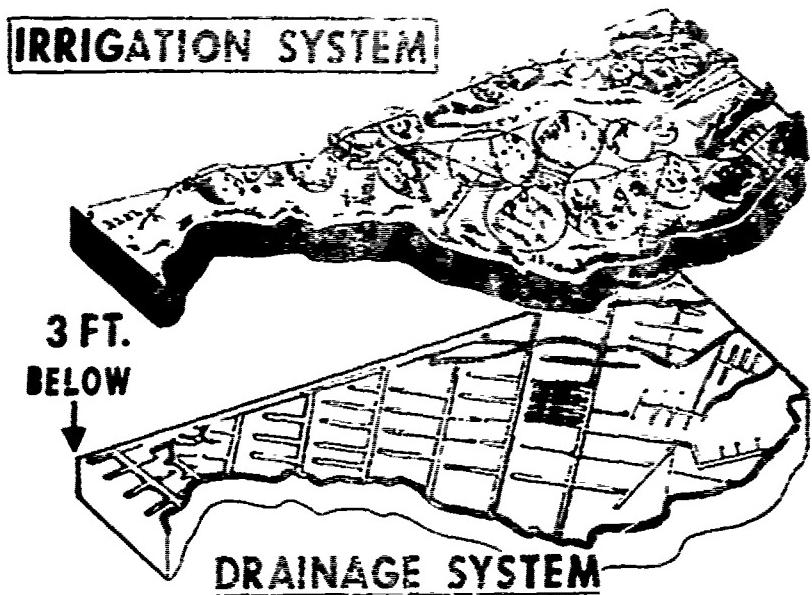


This chart depicts a typical land treatment concept for final treatment. Depicted on the chart are several methods for irrigation. Note that tile fields are provided to collect the water and return it to the streams. Any of these final treatment alternatives can be chosen, and provide approximately the same level of treatment.

HOW IT WORKS...

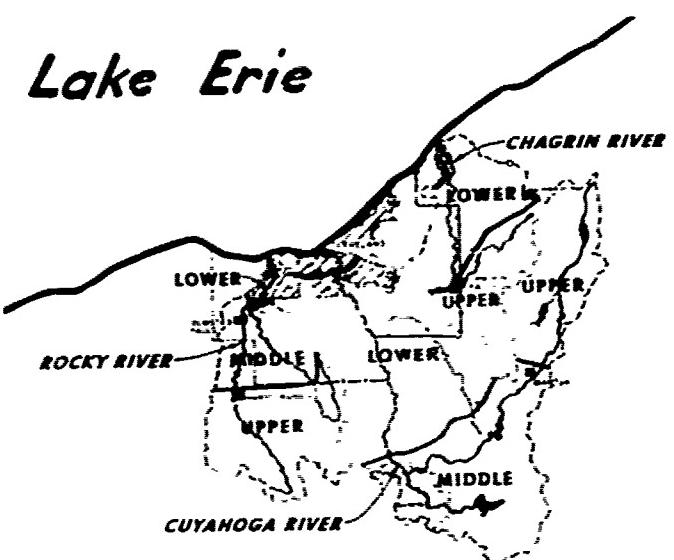


This chart shows a land treatment area in conjunction with a conventional secondary treatment plant returns nutrients to the soil and the clean water to a nearby stream for man's use.

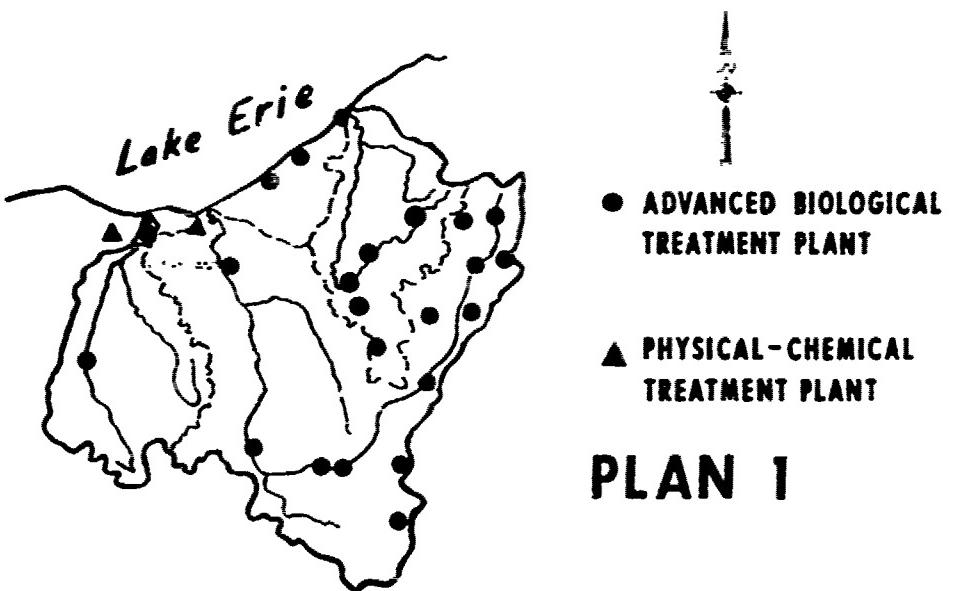


This chart shows a large-scale irrigation area. You will note the drainage system installed under the irrigation area. All spray irrigation areas are planned for tile drainage systems, and the cost is included a portion of the treatment cost.

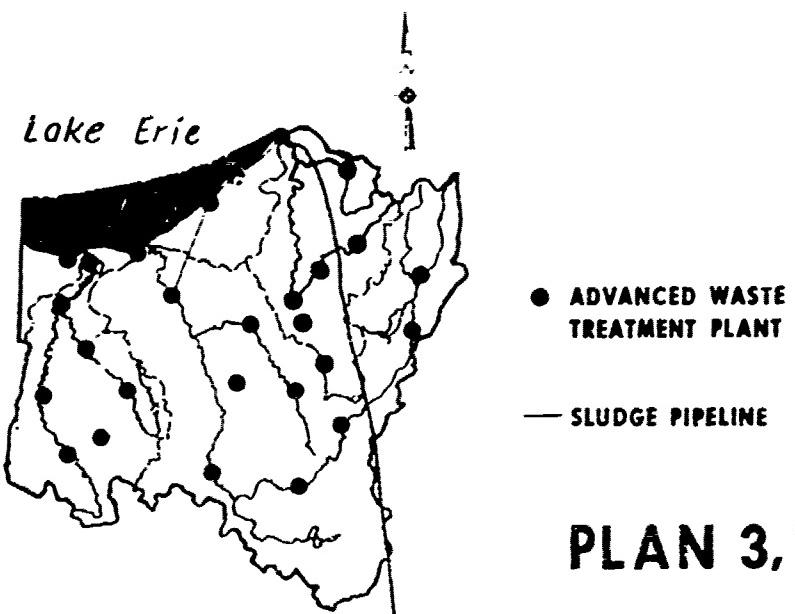
Lake Erie



With these choices of treatment methods in mind then, we proceeded to look at the area, its population trends and the general makeup of each river basin. This chart shows how the basin areas were divided into upper, middle and lower regions based upon population densities.

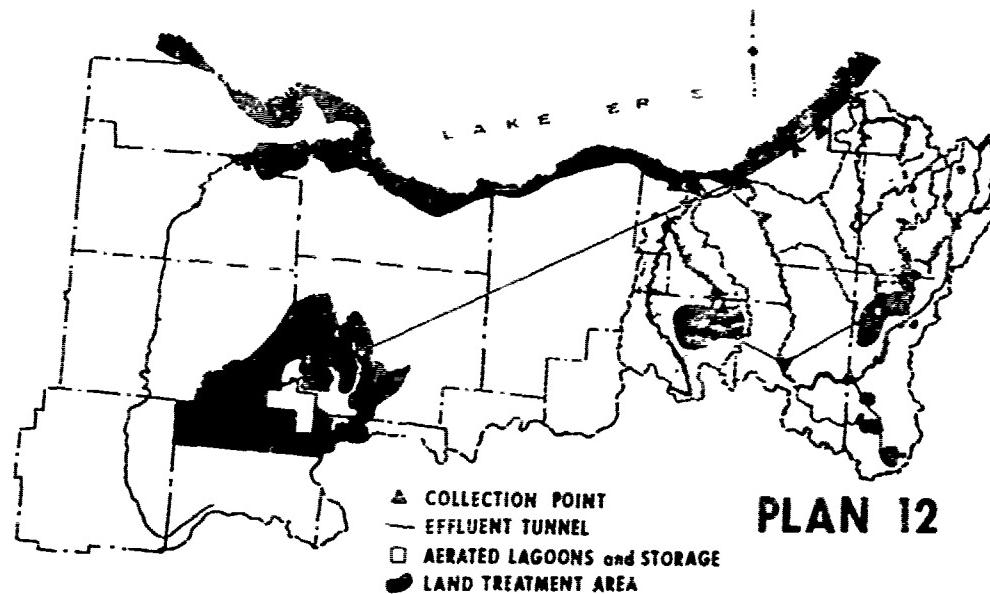


In developing our alternatives we have looked at all possible means of treatment. First, we used the Northeast Ohio Plan as our basic planning tool. That plan was developed by the State and optimized in consideration of costs and social, economic, and environmental considerations. We have updated that plan to meet State standards (Alternative I) as well as treat stormwater runoff. These plans are all water plans.



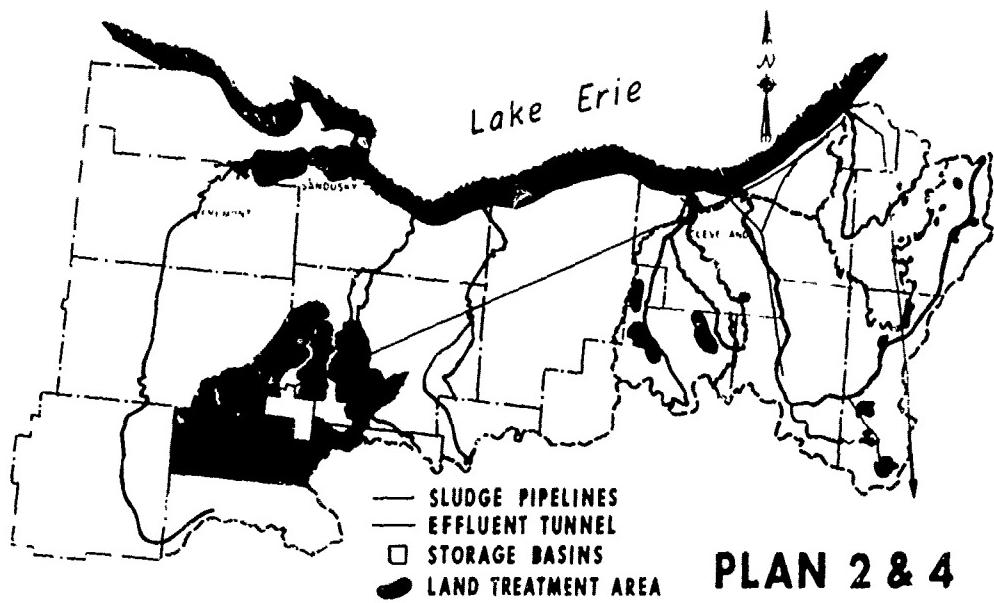
PLAN 3, 10 & 11

We have optimized an all advanced biological plan shown on this chart. We then costed the same plan using all physical-chemical. The appearance of that plan is the same as shown on this slide. Again, we have used the NEO Plan as a base. Plan 3 is the NEO Plan to higher standards. The sludge is carried out to the strip mine area. I'll discuss this later.



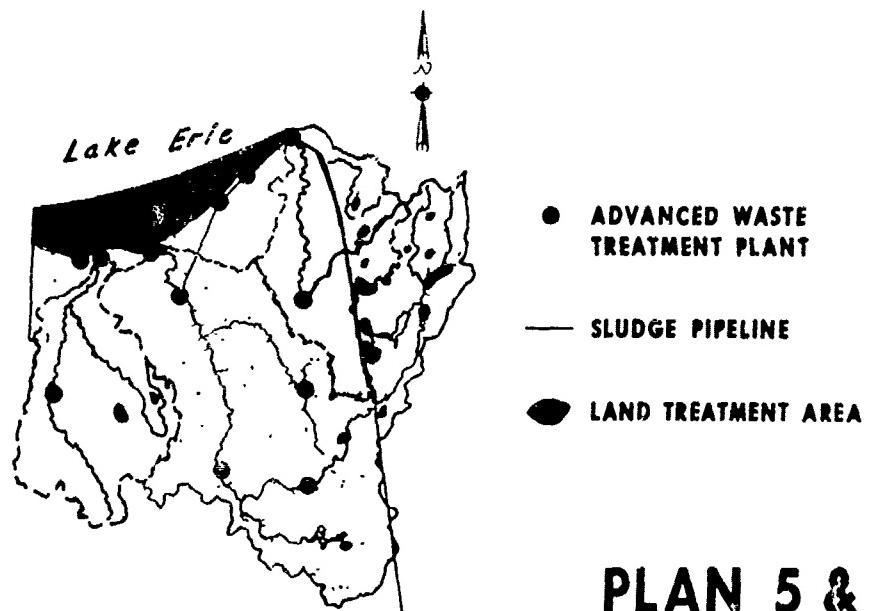
PLAN 12

We have also developed an optimized total land plan, as shown here. This was developed with the general guidance to have the maximum amount of treatment occur within the Three Rivers Basin. The sewage in the greater Cleveland area could not be handled in this basin. This aspect has not yet been coordinated with the counties concerned. We do not expect favorable response, and, in fact, believe this plan might be eliminated for social-environmental reasons.



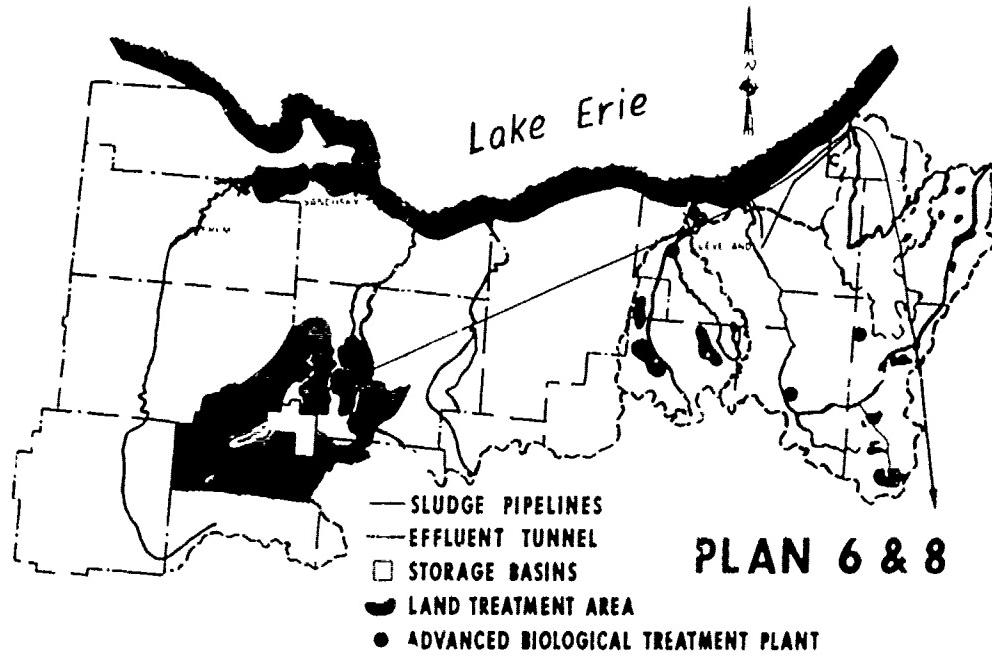
PLAN 2 & 4

This all-land plan utilizes the existing secondary treatment in plants within the basin and transports secondary effluent to the western counties. This plan might be more acceptable than the previous plan.

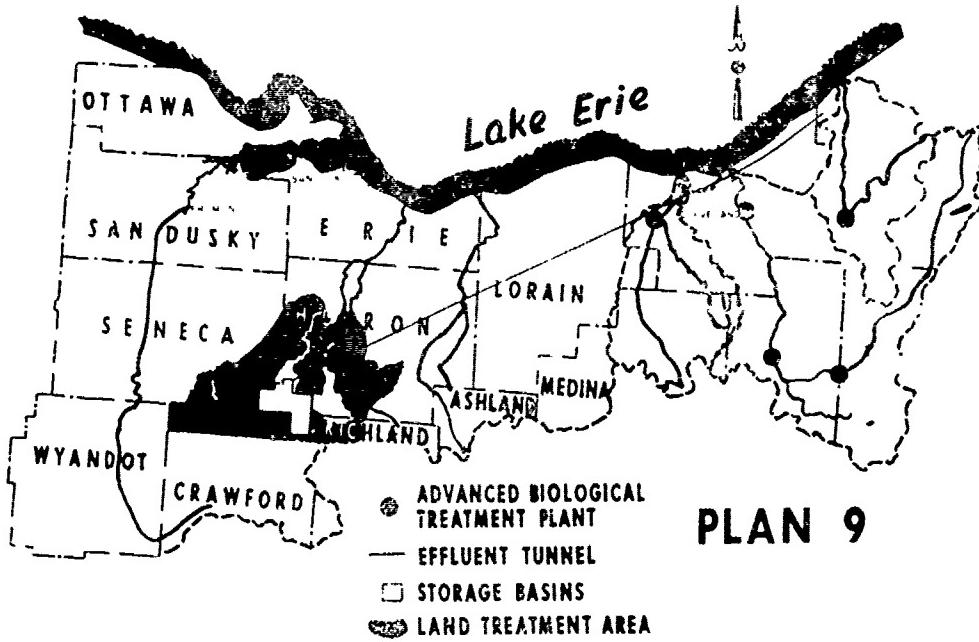


PLAN 5 & 7

The remainder of our plans are combinations. This configuration utilizes to the maximum land treatment within the Three Rivers Watershed District, with the remainder of the effluent treated in plants.



This plan utilizes land treatment in western counties for the Cleveland shoreline collection points. The Akron and Cleveland southerly plants are planned as advanced biological plants to insure adequate flow in the Lower Cuyahoga River.



This plan incorporates aerated lagoons into the large western land treatment areas associated with the tunnel from Cleveland and emphasizes consolidation of wastewater treatment facilities for other areas within the basin.

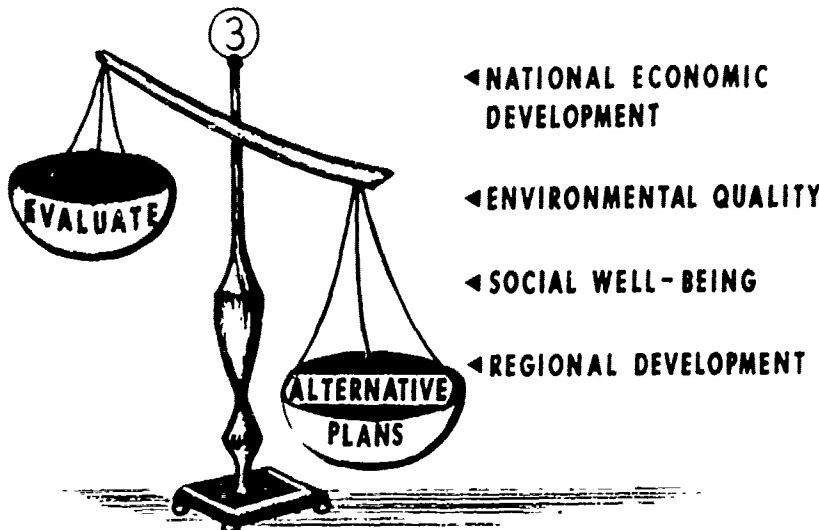
PLAN NO.	TYPE	WATER QUALITY OBJECTIVE		ADVANCED WASTE TREATMENT FLOW (MGD)		LAND REQUIREMENT AREA (1000 ACRES)	INDUSTRIAL WASTEWATER FLOW MILLION GAL./DAY	SLUDGE HANDLING DRY TONS PER DAY	STORMWATER TREATMENT BILLION GAL. PER YEAR							
		N STREAM	D EFFLUENT	N C	D C				MUNICIPAL CUTS DE BASIN	WATER	LAND	DIRECT TO STREAM	STRIP MINE	LAND APPL. SLUDGE	WATER	LAND
MEOWOP	W	✓			715	64										
1	W		✓		715	64				140		786		835	74	
2	L		✓				779	29	211			140	786	477	34	74
5	C		✓		689	64	26	7		138	2	786	424	31	376	58
6	C		✓		390		389	21	94	11	129		393	41	247	58
3	W			✓	715	64				140		786	330	86	515	9
10	W			✓	779					140		786	537	386	9	65
11	W			✓	779					140		786		682	9	65
4	L			✓			779	42	237			140	786	477	34	18
12	L			✓			779	48	134			140	786	132		26
7	C			✓	697	64	13	8		138	2	786	491	13	411	33
8	C			✓	192		58 ⁷	31	168	20	120	786	316	28	284	8
9	C			✓	455		323	2	104	71	69	786	377		317	5
																69

This chart shows the comparison of the twelve alternatives for various aspects.

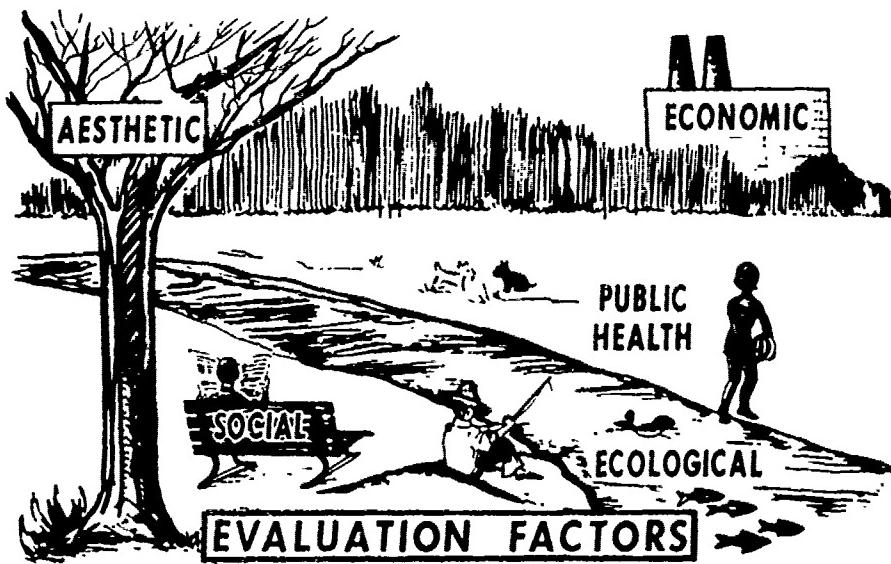
PLAN NO.	AVERAGE ANNUAL COST MILLION OF DOLLARS					
	MUNICIPAL INDUSTRIAL STORMWATER	M and I	M and SRO	M,I and SRO		
1	102	41	124	143	226	267
2	174	36	128	210	302	338
5	107	41	160	148	267	308
6	148	36	161	184	309	345
3	145	65	265	210	410	475
10	151	65	263	216	414	479
11	133	65	247	198	380	445
4	180	65	216	245	396	461
12	140	65	185	205	325	390
7	141	65	118	206	329	394
8	179	65	187	244	366	431
9	149	65	244	214	393	458

This chart shows the comparison of all twelve alternatives from a cost-effectivity point of view. They must undergo a comparison from a social-environmental point of view. That evaluation is currently taking place.

Plans 10 and 11 are the Basic Optimized All-Water Plans, and Plan 12 is the Optimized All-Land Plan. It should be recognized that the cost figures are planning figures, and only accurate to plus or minus 20%. The costs of the plans 11 and 12, with or without stormwater, are relatively close.



You cannot choose the final plans in light of cost-effectivity alone. You must also consider social-environmental evaluations. These must be weighed separately in light of the national goals shown on this chart. Then, one must determine what they are willing to pay in cost to achieve their social-environmental standards.



We have a team of non-engineers making such an evaluation now against these factors.

State and local officials and public opinion must also be gathered. The final decision and selections rest in their hands. I think this is important to understand. This exercise is for use by the State and the final product must be acceptable to them. Therefore, we may end up with more than one plan retained by the State for further consideration and for the final report. Also, each plan retained must be time phased to show how we get from the system in being today to the system planned for the future.

PRIORITIES FOR SLUDGE MANAGEMENT

STRIP MINE RESTORATION



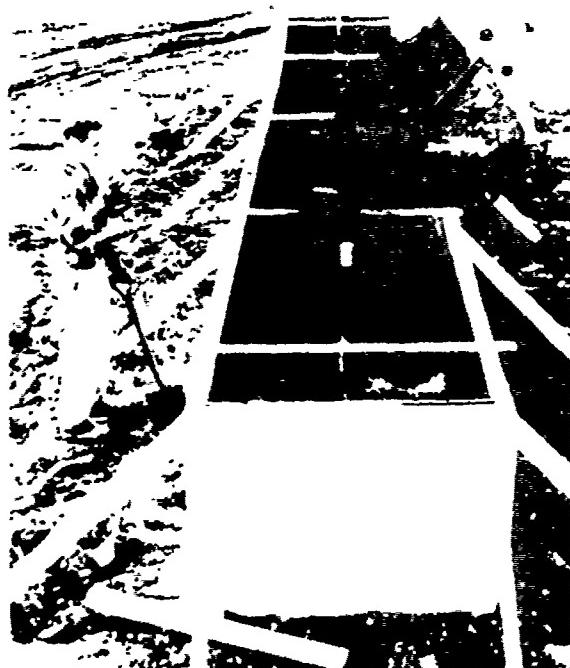
AGRICULTURAL LAND APPLICATION



INCINERATION AND LAND FILL



Some priorities have already been set by the evaluators. They have chosen strip mine restoration as the first priority for sludge disposal. There are some reuse values to be gained here as well as in the agricultural applications. In strip mines we may restore forest growth for wildlife, and in agricultural application we may reduce the need for artificial fertilizer. In the incineration alternative, we have an air pollution problem that may be totally unacceptable.



Let us see what one experiment has shown relative to application to strip mines. Here is a box being filled with strip mine material. This is a Penn State experiment.



Here trees and shrubs
as well as seeds of
different varieties
are being planted.



This shows the
growth after only
application of
normal rainfall.

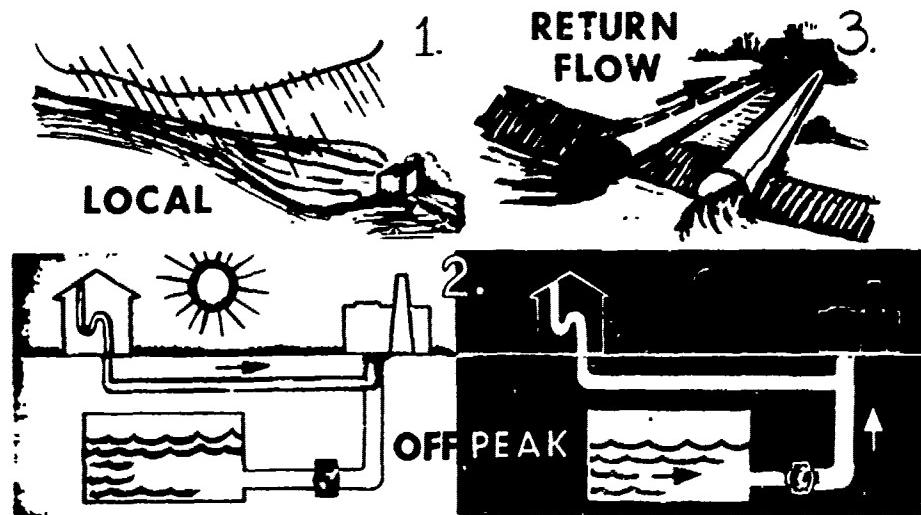


This shows the growth in a similar box after weekly application of 2" of sludge. Both boxes were exposed the same length of time.



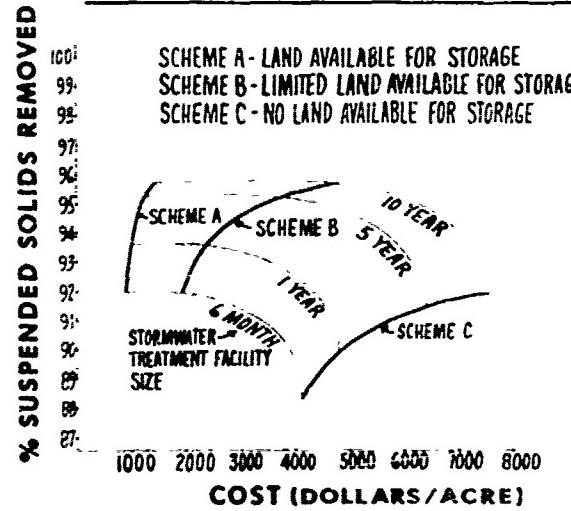
This is a map of the strip mine area to be treated. There is an existing right-of-way for a pipeline.

STORMWATER TREATMENT



An important priority established is the need to return stormwater to the basin of origin. Related back to the all-land plan, this priority is not met since the effluent carried to the vicinity of Huron County is not returned to the Lower Cuyahoga, but released in nearby Huron County tributaries and returned directly to Lake Erie. This takes water away from the Lower Cuyahoga and may not leave sufficient flow to flush the Lower River.

COST VS. SUSPENDED SOLIDS REMOVAL



This chart only compares the cost-effectiveness of collecting stormwater at different design criteria. We chose to collect for a 1.27" rainfall which is relative to the 1 year curve, since the added treatment benefit associated with an increased collection did not appear to justify the added cost.

4.

IDENTIFY

THE
ALTERNATIVE
PLANS

THAT BEST

MEET

WATER QUALITY GOALS

WHILE MAXIMIZING BENEFITS UNDER

THE FOUR NATIONAL GOALS.

Once we have completed our social-environmental assessment, we should be able to identify the best alternative or alternatives. This has yet to be done and requires cooperation of the Federal, State and local agencies participating in the planning task.

5.

STUDY...

INSTITUTIONAL FACTORS.

SUGGEST...

IMPLEMENTATION
PROGRAMS.

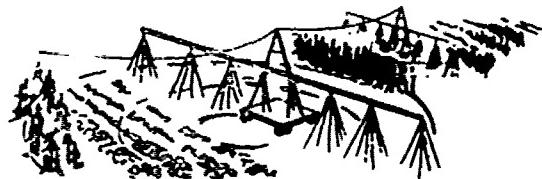


We must look at institutional factors as we look at Regional Wastewater Management. We are doing this and have defined a few areas of interest.

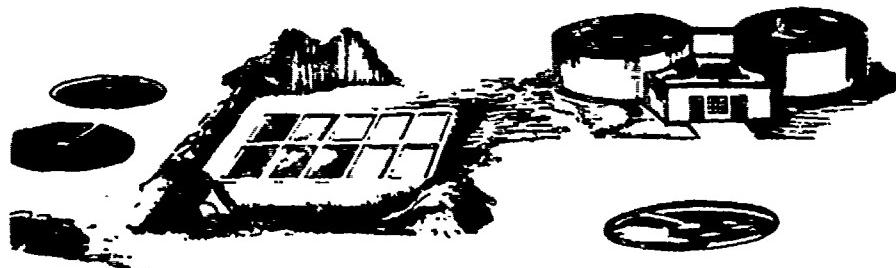
INSTITUTIONAL FACTORS			
A. GOVERNMENTS	B. PLANNING AGENCIES	2	URBAN-SUBURBAN CONFLICT
COUNTIES 8	REGIONAL 3		CLEVELAND VS. 31 MUNICIPALITIES
TOWNSHIPS 75	A-95 CLEARING HOUSE		CLEVELAND REGIONAL SEWER DISTRICT
MUNICIPALITIES 102			
3	EXISTING STUDIES	STAR	PLANNING REQUIREMENTS
OHIO WATER DEVELOPMENT PLANS: NORTHEAST NORTHWEST			REGIONAL PLAN REQUIRED BY 1 JULY 1973.
GREAT LAKES BASIN COMMISSION STUDY			

The number of Governmental bodies affected is tremendous and all will be involved. We have incorporated the existing studies in our effort and do propose to complete the draft of our work in January 1973.

6.



DEVELOP EARLY ACTION DETAILS



We will look to early-action possibilities as we define the final selection with the State. Some possibilities appear to be a pilot program for sludge treatment in strip mines and a test program for land treatment.

7.

CLOSE STATE ^A ^{N D} LOCAL COOPERATION

I have already emphasized our continued need for this cooperation to occur. Until this time, due primarily to the lack of definitive alternatives and an agreed-upon approval to final selection of alternatives, the effort has been more toward coordination than total cooperation. If the final product is to be of any value, all of us must participate in total cooperation.

INTERAGENCY COORDINATING COMMITTEE

- FEDERAL
● ENVIRONMENTAL PROTECTION AGENCY
● U.S. GEOLOGICAL SURVEY
● U.S. DEPARTMENT OF HOUSING AND
URBAN DEVELOPMENT
● SOIL CONSERVATION SERVICE



- STATE
■ OHIO DEPARTMENT OF DEVELOPMENT
■ OHIO DEPARTMENT OF HEALTH
■ OHIO DEPARTMENT OF NATURAL RESOURCES
■ OHIO EPA (NEWLY ORGANIZED)

LOCAL
▲ THREE RIVERS
WATERSHED
DISTRICT

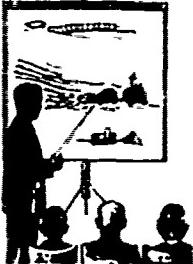
▲ NORTHEAST OHIO
AREAWIDE
COORDINATING
AGENCY

These are the agencies in our inter-agency coordinating committee.
These are the people to pull the final alternative together.

PUBLIC COORDINATION



PRESENTATIONS



WORKSHOPS

This is the kind of past and future public participation we have had and are going to have. We need first, however, to get with the State and local agencies to decide which alternative to retain for the final effort. Then we need to get with the public twice—once to review and add to the selection of alternatives to be retained, and then to comment on the final.

The major portion of the work is yet to be done. This final effort will require the assistance of Federal and State officials, local authorities, and the public. This final effort will result in the selection of a plan or plans to be used by the State in implementing a total Wastewater Management System in the Three Rivers Watershed Area. The final selection process will evaluate each of the twelve plans on a cost/effectiveness basis, and make trade-offs against a social-environmental assessment. The possibility of early-action programs will be pursued. Our intent to serve the State of Ohio by offering an update to previous planning efforts. Hopefully, we will arrive at a plan or plans acceptable to all. These plans must and will be time phased for implementation so as to achieve the proper relationship between what exists today and what must be added or improved, and when.

Thank you

ATTACHMENT 2

Wastewater Study, a brochure

(INSERTED AT BACK OF REPORT)

ATTACHMENT 3

The Cuyahoga, We've Only Just Begun
a brochure

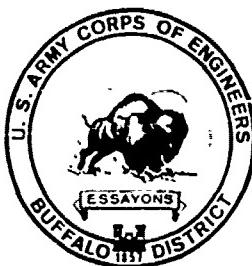
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ATTACHMENT 4

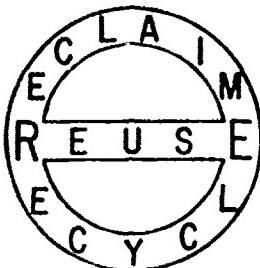
The Quest for Quality, a booklet
(INSERTED AT BACK OF REPORT)

ATTACHMENT 5

The Purewater Press
a series of newsletters



THE PUREWATER PRESS



A WASTEWATER MANAGEMENT NEWSLETTER

NUMBER ONE

APRIL 1972

JUST ANOTHER NEWSLETTER?

We don't think so. In a series of newsletters this next year, we will bring you information and opinion on water resource problems, especially concerning the management of wastewater. The series will center on the Buffalo District's study of alternatives for wastewater management in the Three Rivers watershed area. This study, the status of which is discussed in the columns below, has been in progress about one year and will be completed early in 1973.

The newsletter will go beyond giving a description of an ongoing study. It will provide information about the technical and institutional progress of our and other studies and present items of interest and sometimes amusement to the ecologically concerned public. A forum will be provided for questions and comments from all people interested in the water resources problems of the region.

We will provide a great deal of information representing many alternatives toward dealing with the problems of water management. The amount of space given to one subject or another will be determined by interest shown by the public and the lack of current public information on that topic. We expect and welcome your response to the ideas presented in the newsletter.

STATUS REPORT WASTEWATER MANAGEMENT STUDY

Background

Part of the River and Harbor Act of 1966 called for surveys on the Great Lakes, "particularly Lake Ontario and Lake Erie, in connection with water supply, pollution abatement, navigation, flood control, hydroelectric power, and related water resources development and control." With the increasing awareness and concern for wastewater problems, a feasibility study was undertaken to determine the magnitude of the problem. In addition, it was to explore alternative solutions, outline advantages and disadvantages of the alternatives, and evaluate economic, social, environmental, and institutional impacts of regional wastewater management programs. The Feasibility Study was completed in July 1971 and distributed with the Secretary of the Army's endorsement 19 August 1971 (see article below).

In November 1971 the House and Senate Public Works Committees passed resolutions authorizing a Survey Scope Study. They had found the work in the Feasibility Study to be significant enough to carry on further studies.

REPORT AVAILABLE. There are a few copies available of the Wastewater Management Feasibility Report. If you would like one, just note your request in a letter or on a postcard.

The Survey Scope Study

The objective of the survey investigation is to provide a systematic review of established and newly developed wastewater treatment methods applicable to the study area. The ultimate goal is to develop an optimal, workable plan for managing future wastewater loads. The best plan will result from the screening of a large number of alternatives down to the three or four demonstrating the greatest potential for achieving the water quality objective, while being environmentally sound and implementable. These representative alternatives will then be presented for public review, with the plan most acceptable to all parties after necessary changes, being proposed for implementation.

The plan of study for developing the optimal wastewater management plan has been formulated, and scopes of work for the various professional consultants contributing to the study (see column one, page two) are complete. Contract negotiations are underway, and augmentation and refinement of data will begin immediately. By the end of May, the first of a series of coordinating meetings between the various Contractors will be held, and the screening of alternatives will begin. At the end of August, the number of alternatives will be reduced to those three or four having greatest potential. By 15 October, the optimal plan for the study area will be reported. The final report will be published about 1 February 1973. Included in the final report, in addition to schematic designs of all treatment components, will be an implementation schedule emphasizing "early action" projects intended to achieve significant immediate water quality enhancement.

CONTRACTS AND STUDIES

The basic research formulation, and examination of the alternatives and techniques for wastewater management under the Corps of Engineers Survey Scope Study will be done through contracts with several Architect/Engineer firms. Four areas of study have been determined. The four are water disposal systems, land disposal systems, industrial disposal, and plan formulation.

The two contract studies of water and land disposal call for detailing the types of alternatives and methods discussed in the Feasibility Study, with special concern for the environment and cost. The special problems of industrial wastes are examined under the third contract. Plan formulation, which includes organizing a plan to implement the program, including early-action projects, will be developed under the fourth contract.

A large number of firms with experience in these areas have been examined and proposals for contracts on various study areas have been received. The selection and contracting process is continuing, and the formal signing of contracts will take place shortly.

PERSONNEL NOTES

Wastewater Management

The Wastewater Management Study is being conducted in the Planning Branch of the Buffalo District. Donald Liddell is Chief of Planning and has assigned Robert Nicaise as head of this project. Working with him are Thomas Vogt, Civil Engineer, John Pelowski, Civil Engineer, and LT James Speakman, Ph. D., Environmental Engineering. Dr. Edward Hopson, Sanitary Engineer at the State University of New York at Buffalo, provides help on a part-time basis.

Environmental Section

A new environmental subsection of the Planning Branch at the Buffalo District has been formed to study and consult on all matters concerning environmental effects and Corps of Engineer activities. Headed by Edward Pickering, M.S. Biology, the Section includes LT Speakman, Eugene Richards, Civil Engineer, and LT Gary Ritchie, Ph. D. Plant Ecology.

NORTHEAST OHIO WATER PLAN UNDER REVIEW

The Buffalo District has had the pleasure to help review an excellent report by the State of Ohio, soon to be published, which examined water uses and needs in northeast Ohio. Extremely comprehensive, the report covered recreational, economic, and other social factors as well as environmental concerns. Preliminary recommendations included many "nonstructural" alternatives such as floodplain zoning instead of channelization and dike building. This report goes a long way towards understanding many of the complex water management problems of Northeast Ohio.

NUTRIENT NOTES

PHOSPHATES

Over-use of phosphates is said to be hastening eutrophication of water bodies, but scientists preparing material for the 1972 U. N. conference warn of another danger; the possibility that there will be a shortage of this key element of life. One of the conclusions reached in "Man in the Living Environment," a report prepared for the conference by the Institute of Ecology, is that if current trends continue all known reserves of phosphorus will have been used up in 60 years by a world population which will have grown to 11 billion. The possibility of discovering new reserves is limited by a geological upper boundary of about 30 billion tons of usable phosphorus. The researchers point out that phosphorus is the most nearly limited, and the least efficiently recycled, key element in nature. Also observed was the fact that world food production could support only two billion people if phosphate fertilizers were not available.

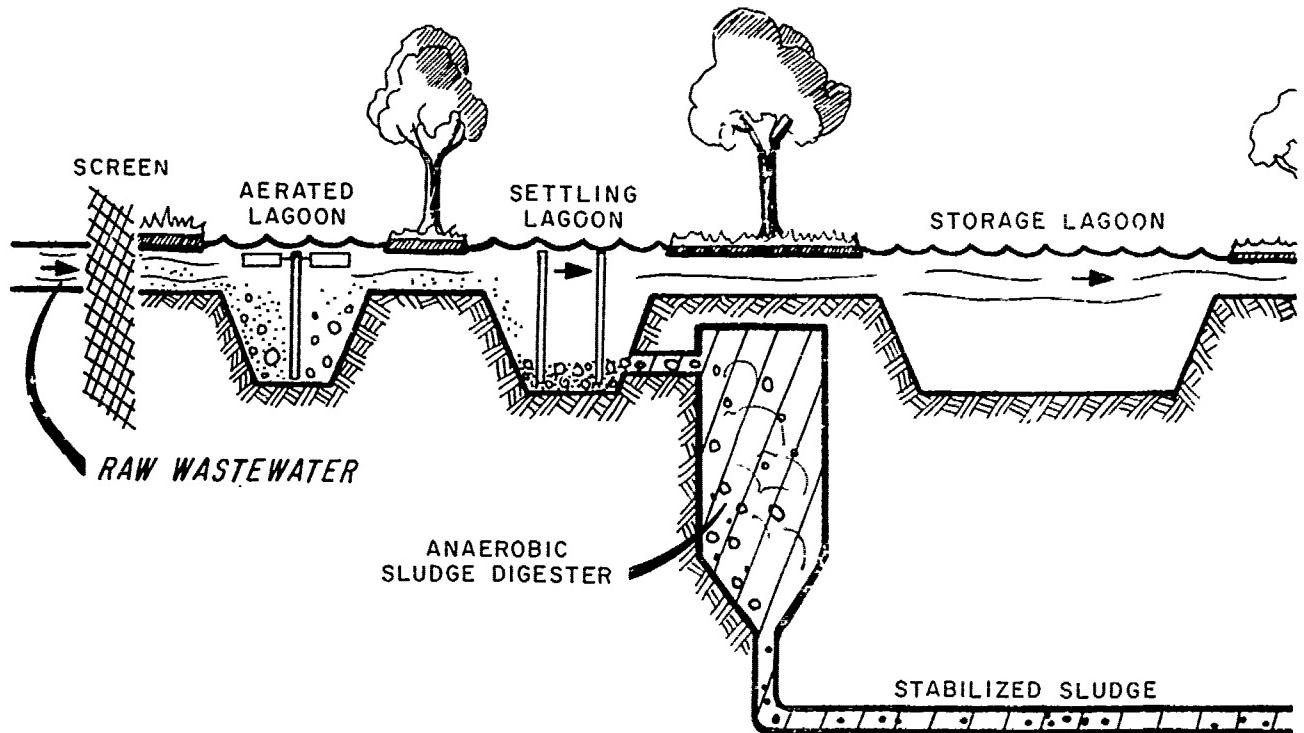
BAN PHOSPHATES? The County of Erie, State of New York (Buffalo and environs), imposed a complete ban on phosphate in detergents in January; a partial ban had been in force previously. Although it is much too early to have definite results, Dr. Robert Sweeney of the Great Lakes Laboratories, State University College at Buffalo, reports that the partial ban has made a significant decrease in algal growth and phosphate concentration in the waters near Buffalo. The effects of the total ban will be seen this summer. This nonstructural control of pollution, should its long-range environmental and social effects be positive, has the additional economic benefit of reducing the need for phosphate-removal facilities in new wastewater treatment plants.

LAND - THE LIVING FILTER

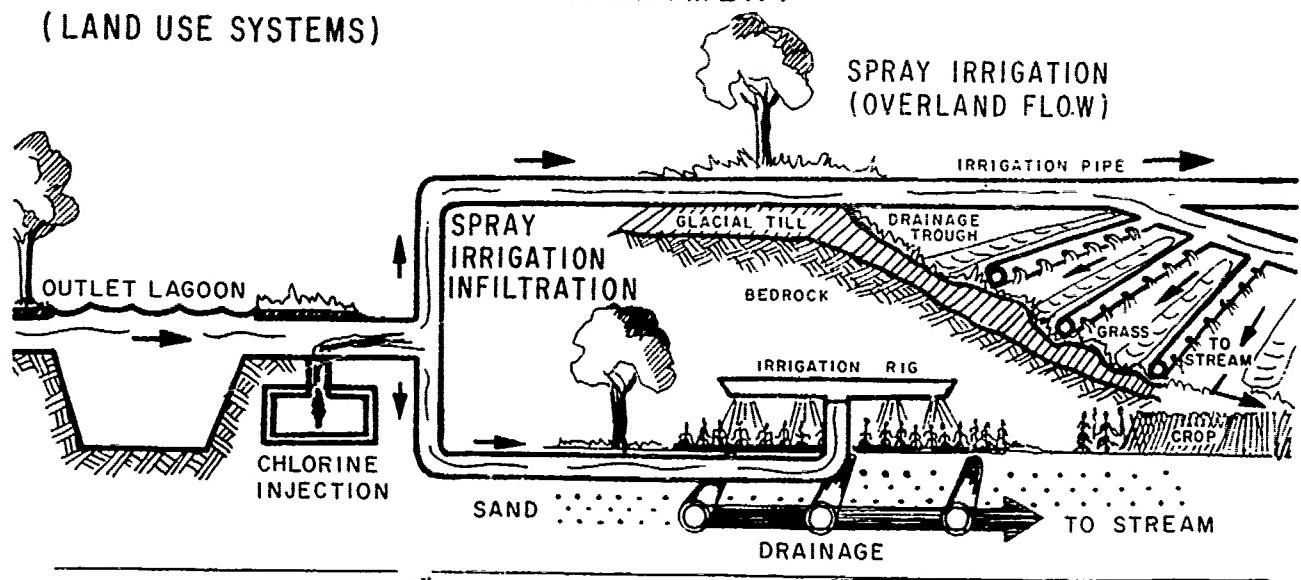
By diluting our wastes in various bodies of water for centuries, Western man succeeded in keeping his nearby environment clean. However, in the process, due to a rapid growth in population and even more rapid growth in water use, man has begun to seriously damage even destroy, the water resources for many uses. Improved treatment methods can greatly reduce the pollutant input. Today it can be seen that many so-called "pollutants" are actually resources out of place; the problem is retrieving them for use. Advanced technology has improved the recoverability of these misplaced resources in water based systems, but through nature's technology too, many of them can be very well used, used to grow crops. The drawings on the next page show a representative system. After preliminary treatment to remove toxicants, and possibly other contaminants, wastewater can be applied to the land by various irrigation methods. As the water seeps through the ground, various mechanisms remove the "pollutants." With the action of plants and other organisms in the soil, it is easy to see the origin of the term "living filter."

Some controversy has arisen over whether a land-based treatment or a water-based treatment is better. In some quarters the argument takes on the appearance of open conflict. But as LT General F. J. Clarke, Chief of Engineers, has said, "Our problems with our rivers are physical, not metaphysical;... we must look at treatment and (not versus) storage and land disposal and recycling and conversion and reuse, and anything else we can find that might help us solve any given problem in any given area."

BASIC WASTEWATER TREATMENT (LAGOON SYSTEM)



ADVANCED WASTEWATER TREATMENT (LAND USE SYSTEMS)



SLUDGE APPLICATION



QUESTIONS/ANSWERS

The questions in this issue are those we have been asked most often by mail, phone, and in meetings by a variety of public servants, conservationists, and others. The answers come from a variety of sources within the Buffalo District, but reflect, we think, the position and attitude that the Corps of Engineers maintains.

1.Q. We have heard mostly about land disposal. Would you say that this technique is the ultimate solution for treating waste rather than putting it into the streams and rivers?

A. The Feasibility Study dealt with the two extremes - all water and all land - and one combination. We are certain that, though some areas may be best adapted for only one of the methods, the solution most feasible in northeast Ohio will lie somewhere between the extremes. We believe that there are some areas where land disposal will be more beneficial and others where water systems will be better; therefore, a combination plan will probably develop.

2.Q. The use of land disposal sites outside the watershed and then bringing the water back sounds much more expensive than just recycling the water within the watershed. Could you comment?

A. The reason we went outside the basin was that these were the areas most suitable for irrigation. You are correct that it would be more expensive. We hope to find land areas within the basin during the survey study for those areas for which land application appears to be better than conventional water systems. We have no goal for a certain amount of land in the survey study as we did in looking at the all-land alternative in the Feasibility Study. We will now be looking for the best sites and the best methods for the region.

3.Q. It seems that your land disposal studies considered only technical feasibility. What about economic feasibility? What about economic feasibility? The farmer would have to feel the use of wastewater was going to be profitable.

A. You are exactly right, and preliminary evidence leads us to believe that use of treated wastewater on farmland is highly feasible economically. This will be detailed in the Survey Scope Study. The feasibility Study did focus only on technical feasibility, while an integral part of the Survey Scope Study is a thorough economic analysis.

4.Q. In the Feasibility Study it appears you are removing recreational areas with your land site selection. Why?

A. We are not removing recreational sites but will hopefully increase recreational lands. A common misconception has developed with the Feasibility Study. The sites were chosen with limited information in order to produce a completed alternative for study. Future studies will concentrate on smaller sites with possible

recreational lands on the fringes. Recreational strips along transportation lines are also being considered

5.Q. How much will stream flow be reduced in the summer months if land treatment is used?

A. The stream flow will actually be increased in the summer months. Proper management of the return flow from the land sites will bring more water to the streams than would normally be generated at that time of year.

6.Q. What about using some of the land disposal techniques in the strip mine and sand and gravel areas? Also, hasn't Penn State University had some real success in applying sewage to timber with increased growth?

A. One of the major advantages to land processes is their ability to upgrade soils to a more useful level. In Ohio, the strip mines are distant from the study area and transmission would be expensive. Shipping sludge, an excellent soil conditioner may be possible. We are considering the Penn State Study and others similar. Although the spray irrigation of trees can go all year around, there is a greater buildup of nutrients in the soil than with often-cropped plants. Also, water is difficult to regain without underdrains easily installed in most places, but not really possible with timber.

7.Q. Will land disposal systems affect groundwater?

A. All the plans considered in the Feasibility Study would collect the water by underdrains before it mixed with groundwater. This was because the land areas considered in that study were outside the watershed, and the water was to be returned after use on the land. Groundwater recharge is a possible benefit in areas within the watershed. All early projects would be monitored extensively and all systems monitored to insure safety and non-pollution of groundwater.

8.Q. Why aren't we doing more than getting rid of our pollution by means other than dilution? Our campers, for instance, store waste for a period of a week and then flush it out with far less water than we use daily in our home systems. Also, in Asia, people collect waste and put it back on the land.

A. Maybe the worst thing Western civilization did was to go into waterborne sewage systems. We are looking into many new techniques to get away from dilution as a method of treatment. We have in our technical contracts provision for studying nonstructural alternatives, which is what you are talking about, vacuum systems, etc. One problem with these alternatives is social acceptance. Our whole study is oriented toward reclaiming valuable nutrients which can be recycled. We are also considering the effect of a ban on phosphates from detergents (as has been done in Buffalo, NY) as a nonstructural measure of eliminating phosphorus from the waterways. Other areas being studied are fertilizers and runoff problems, use of septic tanks, etc. All alternatives will be compared for cost of present and new practices.

9.Q. Won't nutrients find their way back into the streams and lakes after being applied to the land and filtering through to the underground water systems?

A. Improper management can in certain soil conditions effect groundwater, but that is why we will be doing extensive study of the soils in order to select the right ones for the right method. You can remove most of the nutrients by the proper crop balance. There is an ultimate life in the use of the soil, and since we will probably be putting the sewage onto the land somewhat more rapidly than can be taken up by the crops, we can expect some buildup in the soil. But if the buildup would be too great, we would have to extend the land area or reduce the application rate. This is where the management of the system comes in. We have written into our A-E contract a provision for him to be extremely conservative on the application rates to the soils. And this is a reason for underdrains, which give you a continuing monitoring of the system.

10.Q. There have been many complex, expensive plans developed to deal with this and other water resource problems. Almost all of them end at the study stage because, though the facilities and ideas are effective, there are no means for implementing the plans once they are developed. Will yours be any different?

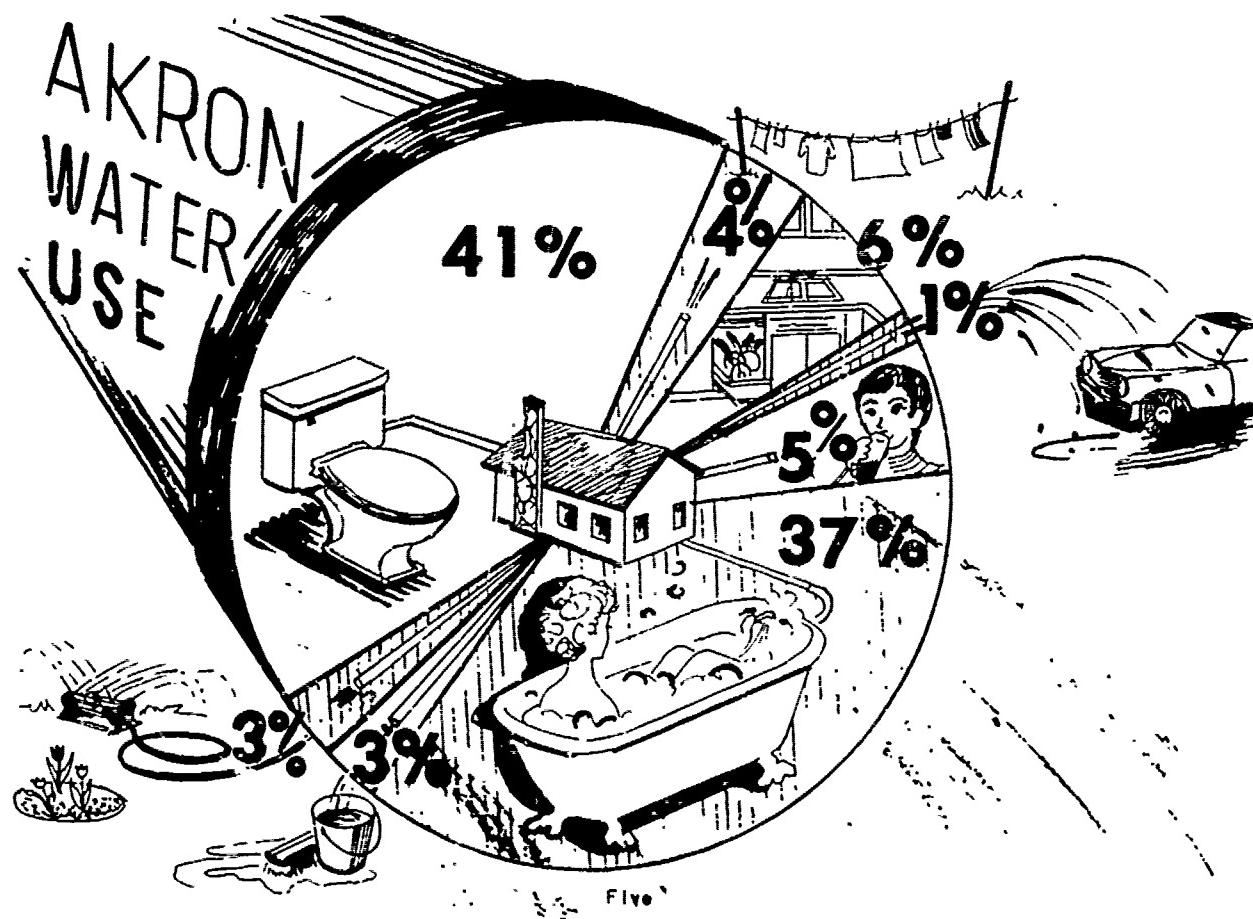
A. This is the exact purpose of our institutional arrangements study which parallels the technical planning. Through this study we are exploring and examining the various entities within the region

which are involved with water use. By understanding existing arrangements we will be able to develop a program for implementing a wastewater management system within the existing institutional structure, and perhaps suggest some additional mechanisms and relations for water resource oriented agencies.

GEORGE P. SMITH REMEMBERED

George P. Smith was the moving force behind much of the early restoration movement on the Cuyahoga River. George's work through the Cuyahoga River Restoration Commission, an agency of the City of Cuyahoga Falls, was influential in focusing local, state, and finally national attention on the problems of water use and abuse in the northeast Ohio area.

His death last fall might have left a great gap in the efforts toward cleaning up the rivers had not his activity attracted many other dedicated people who will carry on his concern and action. Although individuals with the energy and concern of "Old Man River" Smith are rare, they always bring results effective far beyond the normal person's capability. We salute George in the memory of his living accomplishments which will continue to produce action in the reclamation of our rivers and in the better management of our precious water resources.



STUDENTS CASE THE CUYAHOGA - An extensive study, with support from the National Science Foundation, was made of the Cuyahoga River near Kent by a group of undergraduate students at Kent State University. Environmental, social, and economic factors were researched, and a number of recommendations were made. Perhaps the most significant part of this 1970-1971 study was the great amount of concern and positive attitude by all segments of the community about the environment, and the people's commitment to actively work to save it.

The British are at it, too! Pure river water for about \$1.8 million a mile is the price tag set by the British Government for cleaning up England's 2,000 miles of seriously polluted rivers. The total cost for England and Wales is \$3.8 billion. A separate report on Scotland is expected next March. The decision to undertake the Nation's largest water clean-up scheme is based on the study compiled by scientists who examined every mile of river in England and Wales during the past two years. By 1974 the existing 1,400 water authorities in the country will be cut to nine highly sophisticated regional managements with great powers and increased budgets.

As Pogo, the philosophical possum of the swamp, has said about the pollution problem:

"We have met the enemy and he is us!"

READER RESPONSE

We want to include comments, questions, criticisms, etc., from our readers. If you have something concerning wastewater management or related issues you would like included in this newsletter, please send it to the Buffalo District, attention Purewater Press/Reader Response. Also, if there are areas you wish to see discussed more thoroughly or something you need more information about, please write and ask us.

TUNA SCARE - "The Union Chemical Company has announced that a shipment of 5,000 gallons of ultrapure mercury, destined for its giant petrochemical facility in Tumpton, Indiana, was spoiled when a worker, during a routine inspection, inadvertently dropped a tunafish sandwich into the tank car in which the mercury was being transported. Company spokesmen said that the mercury was found to contain 0.5 ppm tuna and is considered totally unfit for industrial use."

(National Lampoon 1971)

COMING ATTRACTIONS

Coming up in the second issue of the Purewater Press are the following:

1. Advantages and disadvantages of Advanced Waste-water Treatment Systems (water based)
2. Useful definitions of treatment terminology.
3. Articles on reclaiming, recycling, and reusing.
4. Technical notes.
5. And more.

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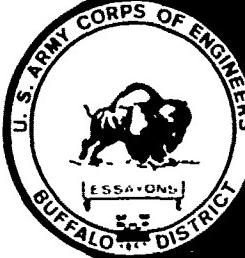
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THE PUREWATER PRESS

NUMBER
TWO

A WASTEWATER MANAGEMENT NEWSLETTER

OCTOBER
1972

COMMENT

We would like to indicate the relative position of the Buffalo District and the Corps of Engineers to the Wastewater Management Studies first authorized by Congress in 1971. The Buffalo District is one of five Districts comprising the North Central Division which is located in Chicago. There are ten such Divisions in the continental United States answering to the Office of the Chief of Engineers in Washington, D.C. The Office of the Secretary of the Army and the Secretary of Defense are at the top of the chain, with the Board of Engineers for Rivers and Harbors providing an independent review of all projects. The studies performed by the Corps, however, are funded under direct authority of the United States Congress.

We have been committed to studying land treatment extensively in addition to other wastewater treatment methods because many other planning bodies have failed to examine the area in depth. General Clarke, Chief of Engineers, has made two statements indicative of the philosophy guiding our studies: "We will, of course, consider costs, engineering feasibility, and the practicality of various possible means of controlling wastes. But the screening of potential solutions will depend on their effectiveness rather than their cost. We will look beyond the traditional methods and consider some that may appear far-out." (Speech at Merrimack River Watershed Associates, Lowell, MA, 6 May 1971); "The word "versus" still appears in far too many places where the words "and" or "in cooperation with" should appear in its place . . . (Speech to Ohio Environmental Council, Columbus, OH, 13 December 1971).

We of the Buffalo District staff in following General Clarke's statements are committed to investigating all systems and submitting each alternative to an equal and impartial viewing for engineering feasibility and social and environmental considerations. We realize that there are deficiencies and benefits in all concepts: we hope to minimize the former and maximize the latter. Finally, we feel that the contractors chosen for our study will provide the basis for a truly unbiased report. As a group, the contractors include traditional sanitary engineers, irrigation and land treatment specialists, ecologists, and sociologists. We hope to mold all the inputs into a plan which will be reasonable, acceptable, and to the best interest of all. We are also confident that if this is not the case, you will not hesitate to contact us.

APPENDIX

SELECTED CONTRACTORS

The Buffalo District has contracted the services of three Architect-Engineer firms, one institutional consultant, and an evaluation group to furnish the expertise needed to accomplish this study. Wright-McLaughlin Engineers of Denver, CO, was selected as the land treatment and plan formulation contractor. This contract calls for determining the most suitable land treatment sites in northern Ohio within the Lake Erie Drainage Basin, developing plans for land treatment, estimating their costs, and, using land and conventional plant treatment plans, developing alternative plans for the study and refining these to one recommended plan.

Havens and Emerson, Ltd. of Cleveland, OH, was selected to investigate stormwater runoff and its treatment, domestic waste loads, and conventional plant treatment. They are to develop plans for the solution of these problems and submit them with their costs to the plan formulation contractor.

Associated Water and Air Resources Engineers, Inc., (AWARE) of Nashville, TN, was selected to study the problem of industrial pollution, determine compatibility of industrial and domestic effluents, and develop plans for incompatible industrial effluents.

The Center for Urban Regionalism of Kent State University was selected to establish economic,

social, ecological, public health, and aesthetic parameters for assessment. The Center will evaluate each plan for its impacts on each parameter and submit conclusions to the plan formulation contractor.

Linton, Mields & Coston, Inc., of Washington, DC, through a contract with the Office of the Chief of Engineers, was selected to investigate Federal, State, and local institutions, finances, manpower, and institutional functions to help arrive at a recommended plan for implementation.

In a study of this scale, coordination among contractors and between the contractors and the Buffalo District office is essential. Therefore, a continuing series of meetings and conferences have begun to insure good communication and planning.

STATUS OF SURVEY SCOPE PORTION OF THE WASTEWATER MANAGEMENT STUDY

Background

The wastewater management program concerns itself with domestic and industrial wastewater and stormwater runoff from urbanized areas. The Buffalo District participated with other Corps of Engineers Districts in developing a plan of study for "A Pilot Wastewater Management Program" during the period December 1970 to February 1971. A Feasibility Level Plan of Study for the pilot program was published in March 1971. The Office of the Secretary of the Army, and the Office of the Chief of Engineers, presented the pilot program to Congress and received authorization to proceed with the pilot program at a feasibility study level. Authority for the Buffalo District Wastewater Management Program was based upon an existing authority in Section 2 of the River and Harbor Act of 1966, PL 89-789. Great Lakes, particularly Ontario and Erie.

The Buffalo District entered into contracts with Architect-Engineer firms in April and May 1971 which resulted in the Feasibility Study being completed in July 1971. The report was distributed with the Secretary of the Army's endorsement on 19 August 1971. The feasibility study was made to determine the magnitude of the problem, to explore alternative solutions, to outline advantages and disadvantages of the alternatives, and to evaluate economic, social, environmental, and institutional impacts of regional wastewater management programs.

Resolutions authorizing the Survey Scope Study were reported from the House and Senate Public Works Committees on 10 November and 23 November 1971, respectively.

A goal of the current survey investigation is to provide a systematic review of established and newly developed wastewater treatment methods applicable to northeast Ohio. This will allow the development of an optimal, workable plan for managing future wastewater loads. The optimal plan will result from the screening of a large number of alternatives to the three or four demonstrating the greatest potential for achieving the water quality objectives, while being environmentally sound and institutionally implementable. These representative alternatives will be presented for public review, with the most acceptable plan being proposed for implementation.

The survey scope study is being developed under consultant service contract. Contract scopes of work were written during December 1971. These scopes of

work were approved by higher authority, and contractors were selected and contracts negotiated from January to May 1972.

The technical part of the study has been broken down into three contracts, one dealing with domestic wastewater and stormwater runoff, one dealing with industrial wastewater, and one dealing with overall regional plan formulation and assessment of land disposal of effluents. Evaluation of alternative plans developed under the technical contracts will be accomplished under a fourth contract. This evaluation will be addressed towards baseline conditions recognizing impacts upon economic, social, environmental and institutional arrangements.

Phase one of the technical contracts (primarily involving data collection) has been completed. The problem data presented in the feasibility study has been reviewed and updated. Additional lands for land disposal sites have been identified. These new lands are located in the Lake Erie drainage basin. An interagency Coordinating Committee consisting of local, State, and other Federal agencies has been set up and briefed. The technical contractors are currently developing alternative plans for handling the wastewater management problem.

Current schedules call for twelve alternative plans to be completed by October 1972. These plans will be presented for public review. By 1 December the plan for the study area will be identified. The final report of the results of the survey scope study is scheduled to be published in February 1973. Included in the final report, in addition to schematic designs of treatment components, will be an implementation schedule, emphasizing "early-action" projects intended to achieve significant immediate water quality enhancement.

Current Status

The Wright-McLaughlin Engineers phase one report which identified soils and potential land management areas for wastewater processing in the Lake Erie Basin of Ohio, was compiled using published data, information gathered during 12 days of field trips, and conversations with District Conservationists, Soil Conservation Service management personnel, and Ohio State University soil scientists and agronomists. In addition, they consulted with Dr. Norman Evans, Colorado State University soil specialist, and Professor Robert H. Fulier, Ohio State University, another soil specialist.

Mr. George Simpson of Havens and Emerson, Ltd., and LT James Speakman of the Corps of Engineers attended a meeting 17 July 1972 in Washington, DC, where Dr. Leon Weinberger and others discussed factors influencing the cost of advanced wastewater treatment systems.

A series of Contractors' coordinating meetings have been conducted at Kent State University, Denver, CO, and Buffalo, NY, to discuss the content of various alternative plans, the data requirements for evaluation, and the critical factors in the refinement of those alternatives.

Interested local organizations have requested Buffalo District personnel to meet with them to discuss specific topics, such as land treatment. Meetings were held with land owners in the Loudonville and Butler area, through the Ohio Farm Bureau Federation, Inc. in Mansfield, through the Mansfield Chamber of Commerce, and with the staff of the College of Agriculture, Ohio State University, through the Ohio Department of Natural Resources. The District is interested in finding other groups to sponsor similar meetings.

Future Plans

Another Contractors' coordinating meeting is planned for the near future at which costs, effectiveness, and environmental impacts of the alternatives will be reviewed and the refinement of the alternatives will begin.

These final plans will be developed to meet 1990 conditions with phased sequence or construction identified. Certain items such as pipeline conduits and the like will be planned for 2020. Designs of system will be refined as required, construction and costing will be phased using current interest rates.

In October and November a series of public meetings will discuss early alternatives, the method of refinement, and the final alternative plans.

An Interagency Coordinating Committee meeting is planned subsequent to the public meetings. Following this third meeting, alternative plans will be finalized and early-action features identified. A summary report along with an Environmental Impact Statement will be prepared, a third public meeting held, and a recommendation prepared.

WORKSHOPS

Contact with the public during the planning of water resources projects has often been limited to public meetings and individual conferences and correspondence. While these remain valuable, the Buffalo District would like additional communication with concerned citizens.

One approach which has not been much used to date is the workshop technique. Workshops are advantageous to planning because they involve interested individuals from a variety of backgrounds.

Workshops are set up by local citizens' groups, such as student organizations, the League of Women Voters, civic groups, the Chamber of Commerce, professional groups, conservation groups, and others. These local groups organize and conduct the workshops, with Corps attendance if desired. Being small in size as compared to a public meeting, the interaction between the participants in a meeting of this type provides the setting for confronting each other with different goals and objectives and resolving differences. It also provides the Corps an excellent opportunity to obtain a degree of public consensus on planning decisions.

The Buffalo District welcomes the opportunity to furnish further information and material to groups interested in organizing and conducting a workshop.

MAP OF SOIL AREAS SUITABLE FOR LAND TREATMENT

As part of the first phase of the survey scope study, the Corps of Engineers has developed the map accompanying this issue. The map depicts soil areas in the Ohio portion of the Lake Erie Drainage Basin demonstrating a capability for land treatment of treated wastewater effluents at an optimal rate of 2 inches per week. There are other soil areas not specified on the map that have a lesser rate capability but could still be used for land treatment. The capability of the soil for land treatment was determined by the

depth of the soil, the hydraulic characteristics, the heavy metal retention capacity, the nutrient-uptake capacity of the soil type, and the characteristics of the sub-soil.

Wastewater effluents contain many nutrients useful as fertilizers for soil enrichment and crop production. Our studies will consider various methods of acquiring rights for land treatment of wastewater effluents in such areas. We will not necessarily be proposing direct acquisition of lands. Rather, we will consider alternative methods such as leasing lands or contracting for the right to irrigate individual and cooperative agricultural areas, forest lands, golf courses, and other sites. Additional methods of obtaining the use of land will also be sought.

None of the areas depicted on the map have been definitely chosen for the proposed use. These are only areas that were found to have the capability for land treatment. It should also be noted that the classifications of these soils were developed from county soils maps that were compiled at different times by different agencies of the Soil Conservation Service. Therefore, while soil characteristics may appear to change at county lines, this is, of course, not the case. Future refinement of the data may show a slightly different geographical presentation. Also, some of the areas shaded as "suitable" are clearly not usable; some of the best soil areas are in downtown Cleveland and Akron under the concrete and steel.

CUYAHOGA RIVER RESTORATION STUDY

For more than a year, the Buffalo District Corps of Engineers has been studying short- and long-range means of returning the polluted Cuyahoga River to a better, more natural, and more useable condition. The relationship between the Wastewater Management Study and the Cuyahoga River Restoration Study is direct: without clean waters, river restoration is impossible; without plans for use and restoration, clean water is without meaning.

In addition to extended studies of erosion, sedimentation, and land and water use problems, an early-action program has been undertaken to provide an immediate aid to some problems capable of short-term help. On 28 February 1972, after its 19 January public meeting in Cleveland, the Board of Engineers for Rivers and Harbors recommended the first series of early-action projects.

"The Board recommended adoption of an early-action program for restoration of the Cuyahoga River consisting of the following elements recommended by the District and Division Engineers:

"Recreation improvements at Waterworks Park (river mile 49.0) and at Fuller Park (river mile 54.0);

"Debris removal in Cleveland Harbor from the head of navigation in the Cuyahoga River to the mouth of the river;

"Flood control and environmental improvements on Big Creek at the Cleveland Zoological Park and vicinity, including Brookside Park and the Fanner Manufacturing Company; and

"The addition of a pilot dredging program, as described in Appendix C. Erosion and Sedimentation, of the District Engineer's report, except that work under this program may be done at any location on the Cuyahoga River;

(CONTINUED ON PAGE FOUR)

"All generally in accordance with the plans of the District Engineer and the Board, and with such modifications thereof as in the discretion of the Chief of Engineers may be advisable, at a total estimated first cost of \$1,584,400, of which \$1,127,200 would be Federal and \$457,200 non-Federal, and \$39,000 annually for maintenance, of which \$35,000 would be Federal and \$4,000 non-Federal: Provided that, prior to construction, local interests furnish certain assurances satisfactory to the Secretary of the Army.

The Board further recommended that the settling basin be given further study and considered for construction if the environmental issues can be resolved and the requirements of local cooperation can be met.

"The Board report is being processed to the Chief of Engineers, who in turn will transmit his proposed report, together with the reports of the Board and the reporting officers, to the Governor of the affected State and to interested Federal agencies for their views and comments. These comments will accompany the complete report to the Secretary of the Army with the recommendations of the Chief of Engineers.

"After the report has been transmitted to the Secretary of the Army, further action toward construction of any project that may be recommended therein will depend upon approval of the project by the Secretary and the subsequent Congressional appropriation of the necessary funds for the work proposed."

Allocation of the necessary funds to begin work on the proposed projects is anticipated during Fiscal Year 1973. The recent flooding on Big Creek may result in some redesigning of the project to meet the more severe problems. Progress on the Pilot Sediment Removal Program has consisted of disposal site selection and the initiation of preliminary environmental sampling.

Flooding and related problems on Tinkers Creek near Twinsburg are being studied and a re-analysis of the Lower Cuyahoga River Flood Control Study is being made. Bank erosion is being examined with plans for permanent long-range solutions. Other problems will be studied as they arise and the Corps will continue to support local efforts to clean the river banks and the riverbed of debris.

ADVANCED WASTE TREATMENT

The magazine, Civil Engineering, published by the American Society of Civil Engineers, has carried articles on recent issues concerning modern wastewater treatment technology. One author stated that the Federal research and development effort has not produced any major breakthroughs in the field. This conclusion was contested by two sources in the July 1972 issue of the magazine.

David G. Stephan, Director of the Program Management Division of the Environmental Protection Agency, replied that many "breakthroughs" in the 1960's have indeed not been widely applied, but not because the technology was not developed. He states, "It is a criticism of the built-in institutional resistance to the application of innovative technology in the waste treatment area, the inherent conservatism of most conventional consulting engineering firms, misunderstanding of 'complete treatment' concepts, and failure to consider the costs of improved pollution control in proper perspective."

Russell L. Culp, the General Manager of the South Tahoe Public Utility District, and one of the proponents of "Advanced Waste Treatment," answered the "no breakthroughs" claim by pointing to a U. S. Superintendent of Document report on three years of Tahoe data. Some of the conclusions of that report were:

"In actual practice, reclaimed wastewater supplies a recreational lake in which algal growths have been successfully controlled by phosphorus removal in the treatment plant and reservoir.

"The California Water Resources Control Board has officially approved the reclaimed water for all water contact sports such as fishing, boating, swimming, and water skiing.

"Chemical treatment, mixed media filtration, and granular carbon absorption are efficient, reliable, and economical processes for tertiary wastewater treatment.

"The Tahoe plant produces only three end products: high quality water, insoluble sterile ash, and harmless stack gases. It has clearly demonstrated that wastewaters or their treatment byproducts need not pollute the environment in any manner, since the means are available to prevent it.

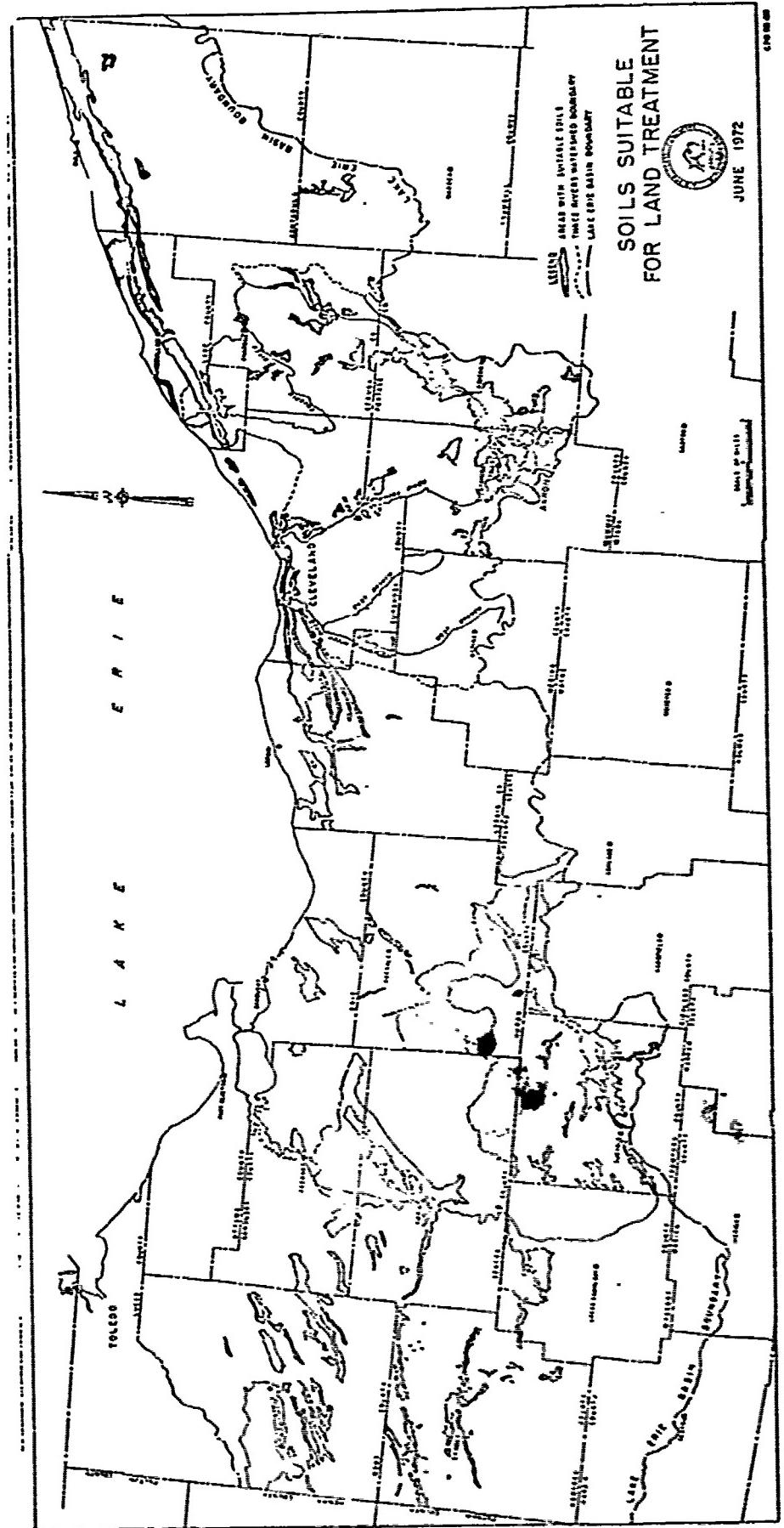
"At a 7.5 mgd scale, the cost of treatment as practiced at Tahoe is slightly more than twice the low cost of conventional secondary treatment, but the cost benefits resulting from completely pollution-free operation are more than doubled. The cost of treatment is only one part of the total overall costs for wastewater collection, transport, and disposal. Even with the most advanced treatment, the cost of sewer service is the least of all common utilities, including electric power, water, gas, and telephone. The costs for necessary treatment should not be a deterrent to the solution of pollution control problems.

"The successful completion of pollution control projects depends foremost on the genuine desire and determination of the politically-responsible governing bodies to upgrade water quality. Along with technical knowledge and public support, they must have the benefit of competent engineering, legal, and financial advice. They must seek, train, and retain qualified personnel to operate and maintain properly the completed facilities."

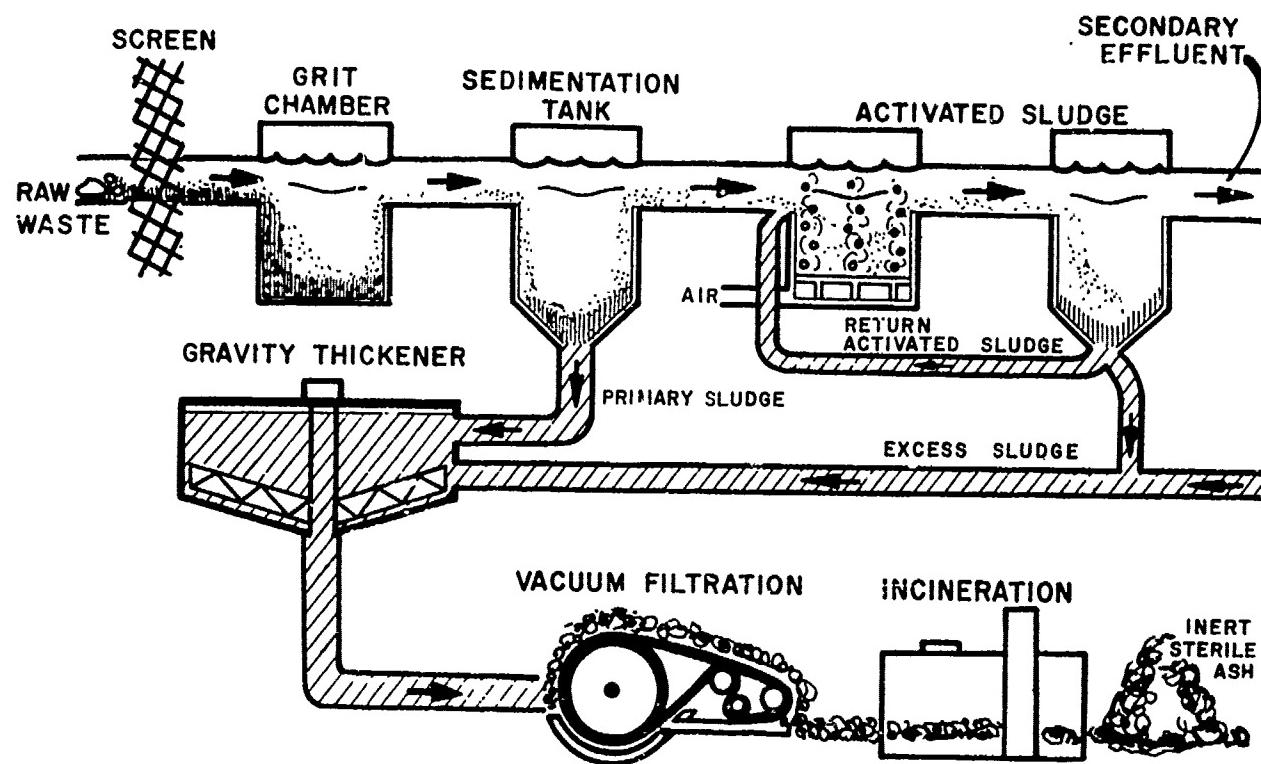
It should be noted that Mr. Culp dismissed possible use of the land treatment concept as follows: "Although some conservationists are heralding land spreading of wastes as a new and universal solution it is actually one of the oldest methods known to sanitary engineers, dating back a hundred years or more. Long experience and numerous trials have shown this method to be very unsatisfactory, with extreme limitations for successful application. Engineers should make these facts known to the public, to conservationists, and to the Congress." On the other hand, many conservation groups and individuals such as former Secretary of the Interior, Stewart Udall, and farmers who welcome the fertilizing waters, support the concept of land treatment. The first issue of the Purewater Press presented information on land treatment.

A typical conventional plant treatment system incorporating many advanced waste treatment methods is illustrated on page FIVE.

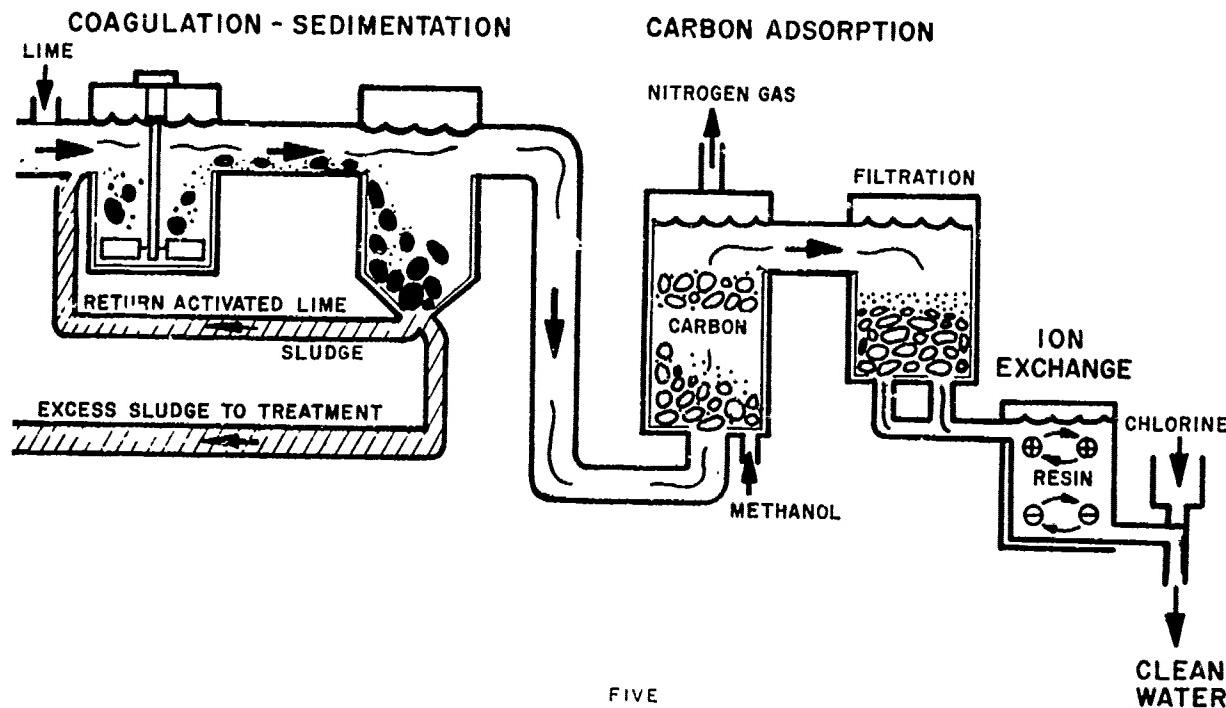
(CONTINUED ON PAGE SIX)



BASIC WASTEWATER TREATMENT (PRIMARY - SECONDARY)



ADVANCED WASTEWATER TREATMENT (TERTIARY OR PHYSICAL-CHEMICAL)



The screen is used to remove the gross solids (tree limbs, etc.), the effluent then flows through a grit chamber where inorganic settleable solids (stones, sand, etc.) settle out. In the sedimentation tank the organic settleable solids settle out as sludge. In the activated sludge unit, bacteria convert the organic suspended material into larger masses that can settle out and be removed as sludge. The effluent then goes through a chemical process called coagulation whereby chemicals are added to the effluent and react with the inorganic suspended solids to form a floc that settles out during sedimentation and is removed as sludge. The effluent then passes through carbon columns for removal of suspended and dissolved organic solids which, after reacting with the carbon, is removed as a floc. The polishing filter is used to catch any floc that escapes from the carbon columns. Ion exchange is then employed to remove the dissolved inorganic solids. Chlorination occurs prior to the water's release to a watercourse. The sludge from the unit processes is put through a gravity thickener which conditions the sludge for filtration during which the water is removed and returned to the system. The sludge is then incinerated and the resulting sterile ash is used for landfill.

REGIONALIZATION

The term "regionalization" is used frequently in the area of water resources and especially wastewater management. The word has, however, different meanings to different individuals. This is understandable because "regionalization" has a variety of interpretations and is applied to two concepts. The main distinction is whether one is discussing physical facilities or management.

Regionalization of physical facilities has the advantage of consolidating many small, often poorly operated and controlled plants into larger, more controlled facilities. This "Economy of Scale" also reduces the costs to all persons participating in such a system. This "Economy of Scale" holds true up to a plant handling 100 million gallons of wastewater per day. This limit exists because, although the facility costs go down as the plant size goes up, the cost of transporting wastewater to the plant goes up as well. Another potential problem is the environmental impact on a watershed occurring when many small discharges become one large discharge. The danger of misoperation of the large plant and possible breakage or leakage of transmission lines are other concerns. Therefore, the degree of physical regionalization desired is dependent upon many economic, social, and environmental factors.

Regionalization of management is a related but separate concept. Here the amount of physical plant consolidation is not the prime concern, although physical regionalization would require regionalization of management. There are several facets to management. Dictionary definitions include terms like control, direct, guide, or administer. Each of these terms could be used in types of regional management, plant operation, and funding. Many questions can be raised about regionalization of management. Should the management region be confined to political divisions or to a sanitary district? Should it be as large as the State or a

major watershed or as small as a single watershed? Should the management be limited to effluent control, or to operation and maintenance, or to financial arrangements, or cover all of these? Thus, management regionalization is as dependent upon multiple factors as regionalization of physical facilities. The people affected should be involved in the decision making and thus, have an input into the final decision.

BANNING PHOSPHOROUS--WHAT IT CAN MEAN

The aging (eutrophication) of our lakes and rivers has been accelerated by the vast quantities of nutrient-rich wastewater we discharge into watercourses. Many scientists believe phosphorous and its compounds to be the critical chemical hastening the senility of many bodies of water, including Lake Erie. Detergents contribute an estimated 60 to 70 percent of the phosphorous found in municipal wastewater. To prevent phosphorous and its compounds from reaching the age-inducing algae, some scientists feel that phosphate removal systems must be built into wastewater treatment plants; others believe we have an alternative.

As mentioned in Purewater Press Number One of April 1972, the Erie County (New York) Legislature passed a law first limiting (1 May 1971) then banning (1 January 1972) phosphorous and its compounds in detergents sold in the county. Despite court challenges and "imported" phosphate detergents (legal under the law), compliance has been general. The effect of the ban on phosphates in wastewater and the subsequent effects on algae growth and eutrophication must be determined. The effects on algae growth and lake-aging will take almost a year to analyze, but the reduction of phosphorous and phosphorous compounds has already been dramatically documented.

In the months since the law has been in effect, civil engineering students at the State University of New York at Buffalo, under the direction of Dr. N. Edward Hopson, have been studying the results of the phosphorous limitations. Few wastewater treatment plants took phosphorous measurements before the ban and many still do not; those taking measurements had various techniques for measurement, different daily patterns, and other differences. Therefore, the data can neither be readily analyzed statistically nor easily compared between treatment plants. Still, the reduction of phosphorous to treatment plants has been about 1.3 million pounds per year.

Below is a table showing the amount by which the phosphorous inputs have been reduced at a number of plants in relation to before 1 May 1971. The Buffalo Sewer Authority facility treats almost 90 percent of the sewage in the county. Orthophosphate is the simplest of the phosphorous compounds, while total phosphorous is phosphorous in all its forms.

Percent Reduction of Phosphorous and Phosphorous Compounds

	Reduction With Partial Ban		Reduction With Total Ban	
	ORTHO-PHOSPHATE	PHOSPHOROUS	ORTHO-PHOSPHATE	PHOSPHOROUS
Buffalo Sewer Auth.	18.7%	19.5%	55.7%	44.1%
Lackawanna	18.3%	N.A.	N.A.	53.6%
Blasdell	30%	12%	17.6%	43.5%
Tonawanda	21.6%	N.A.	N.A.	31.4%

N.A.: Data not available.

One can see that the ban has effectively reduced the amount of phosphorous reaching the wastewater treatment plants in Erie county. Again, what this will mean in terms of reduced algae growth must wait for the further studies.

THE NATIONAL WILDLIFE FOUNDATION SAYS
CLEAN WATER CAN SAVE YOU MONEY

Americans can have clean water by 1980—and save \$5.2 billion at the same time. This hope and challenge was provided by a study accomplished by the National Wildlife Federation. Their study also included an analysis of savings from reduced air pollution (\$6.8 billion).

Although specific figures are unavailable, the Federation talked with economists who have researched this problem for years. They estimate that water pollution costs the United States \$12.8 billion annually. They also believe pollution damages can be reduced 90 percent by 1980.

Polluted water costs you and the Nation untold billions in reduced output, increased expenses, higher taxes, and, most importantly, a generally poorer life: The polluted Delaware estuary alone represents \$350 million in lost recreational opportunities. One-fifth of the Nation's shellfish beds are closed because of water pollution. A single child born retarded because of chemical contamination of the water his mother drinks can cost \$250,000 in remedial training and custodial care.

These figures and conclusions raise inevitable questions:

Are these estimates anywhere near accurate?
Economists and environmental experts freely admit that research data is skimpy. Some contend the Government has been derelict in not running return-on-investment studies similar to those which all industries do before committing their dollars to any new project.

the Federation's sources defend the figures
as conservative--both in damages and

in ultimate savings. (The Federation invites anyone who believes he has more reliable figures to speak up; environmental cleanup must be a team effort).

When does the taxpayer-consumer start getting back the money he's invested?

The savings on water should be effective by 1980. Based on their experts' figures, the Federation estimates the average family must invest a total of approximately \$500 by 1975, without return. But by 1979 the family will recover this \$500; and by 1980 each family will have an annual savings of \$200 (these figures include air pollution cleanup costs).

But will people make this investment?

Yes. For more than 200 years Americans have been profit motivated. Show them where they can make or save a buck, and you'll get action. But the Federation hopes that dollar economics will never be our sole guide. Quality of life is a concern that transcends dollars and cents. Happily, pollution cleanup meets both criteria—it helps improve our quality of life, and it saves us money.

Is the cleanup on schedule?

Water pollution figures are based on the Water Quality Act of 1965. However, in the opinion of the National Wildlife Federation, this effort to clean up has been a failure to date because standards are not uniform or complete, and State enforcement has lagged. For example: Only 27 States have "No further degradation" clauses. Current hope is a new Water Pollution Bill which will probably pass Congress within the next year. It sets up strict Federal standards for effluent discharge by the industrial polluter and for tough enforcement.

How you will save money from cleanup of water pollution

	Total for United States	Your Share As Head of Family
POLLUTION DAMAGES IN 1972	Water pollution now does this much damage each year . . .	\$213
GROSS SAVINGS FROM CLEANUP	A cleanup program can reduce this damage 90% by 1980. Then annual gross savings will be . . .	\$192
minus COST OF CLEANUP	Deduct from future gross savings the annual cost of cleanup . . .	\$105
equals NET ANNUAL SAVINGS	So in 1980 water cleanup will result in net annual savings of . . .	\$87

YOUR FAMILY can save \$87 a year with a cleanup campaign that will reduce water pollution damages by 90 percent. These figures were developed by an investigative team of the National Wildlife Federation.

WATER USE INCREASE IN THE UNITED STATES

Water use in the U. S. has increased almost 20 percent in the last five years and is expected to triple over the next 30 years, according to the U. S. Geological Survey. Mr. E. L. Hendricks, Chief Hydrologist, U. S. Geological Survey, was quoted in the Water Newsletter, published by the Water Information Center, Inc., stating "Although we are not yet in any general danger of running out of water, we have passed the time when we can ignore the water needs of tomorrow." He was commenting on the use to which the Survey's \$1.6 million hydrologic research budget increase for 1973 will be put. About a third of the money will boost the cooperative water programs carried out with 400 State and local agencies. Plans call for establishment of an additional 100 monitoring stations to concentrate on measuring a wide range of toxic elements and substances such as mercury and pesticides entering the nation's waters. The Survey already operates 4,000 quantity and quality monitoring stations.

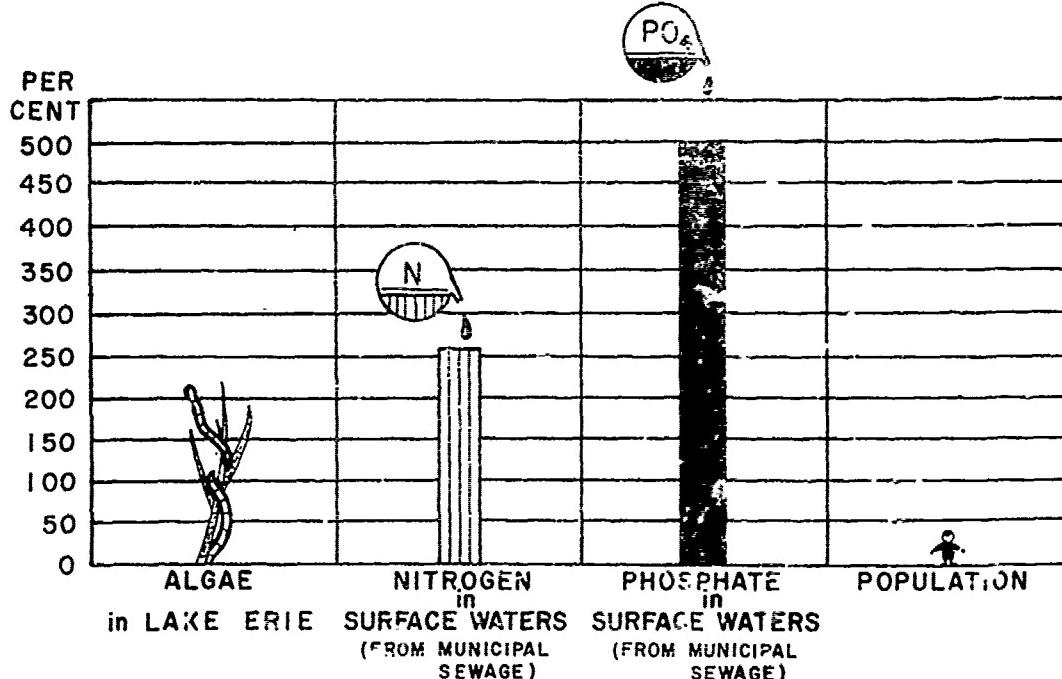
THE CHAMPS OF DIRTY WATER

The United States Environmental Protection Agency (EPA) recently published a list of "the dirtiest rivers in the United States." Top honors (?) go to the (1) Ohio River, (2) Houston Ship Canal, (3) Cuyahoga River, (4) River Rouge (Detroit, Mich.), and (5) Buffalo River (Buffalo, N.Y.). The unlucky recipient of the flows from three of the five rivers is Lake Erie. As a result of regional wastewater studies such as the Cleveland-Akron Study, the people in these areas will be given the opportunity to make improvements to these rivers and the environment as a whole.

THE RELATION OF THE INCREASE IN POLLUTION INDICATORS TO POPULATION GROWTH

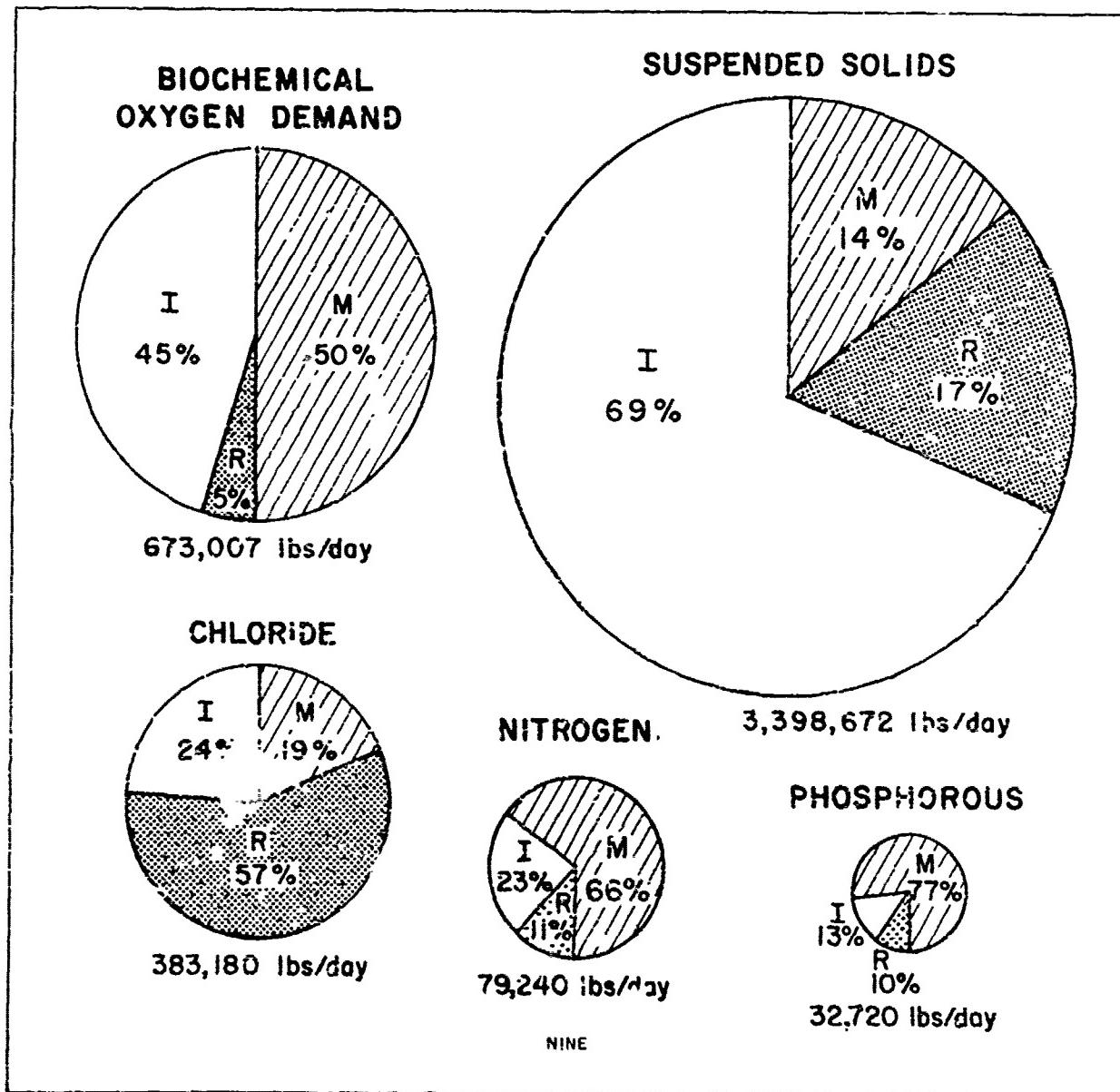
What is the cause of the increase in environmentally degrading pollutants in the United States? It is often stated that burgeoning population is the main source of resource depletion and waste. There is evidence, however, that changing life styles and standards of living may be a more important factor. For example, nations with higher standards of living consume and pollute at a much higher rate per capita than less developed nations. This is not to say that there is no relation between population and pollution. Humankind must, of course, bear the responsibility for the dilemma and its alleviation; but the concern should lie with the amount of used resources and environment polluted, not with how many people are doing it. The graph below shows that, although United States population increased about 43% from 1946 to 1968, common indicators of water pollution have increased many times that percent.

PER CENT INCREASES IN POLLUTION INDICATORS AND POPULATION IN THE UNITED STATES 1946-1968



CURRENT WASTE LOADS GENERATED
IN THE
THREE RIVERS WATERSHED

This series of diagrams illustrates amounts of certain pollutants generated within the area by three sources: industrial (I), municipal (M), and runoff (R). The pollutants and their quantities are depicted here to give a picture of the magnitude of the problem faced in solving the wastewater dilemma. It must be emphasized that these figures represent wastes as created at the source, not as released into waterways. For example, about 90 percent of industrial suspended solids are removed by pre-treatment at the industries even before treatment at wastewater facilities. Industrial wastes are high in BOD and suspended solids, due mainly to the organic wastes of the rubber industry and cooling water of the steel industry. The municipal waste is high in organic material, reflecting a high BOD percentage. Runoff is high in chlorides from salt-spreading during winter. Human waste and household products account for most of the high municipal nitrogen and phosphorous.



PUREWATER PRESS NUMBER TWO
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CUYAHOGA RIVER RESTORATION STUDY	THREE
ADVANCED WASTE TREATMENT	FOUR
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BANNING PHOSPHATES--WHAT IT CAN MEAN	SIX
THE NATIONAL WILDLIFE FOUNDATION SAYS CLEAN WATER CAN SAVE YOU MONEY	SEVEN
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COMING ATTRACTIONS

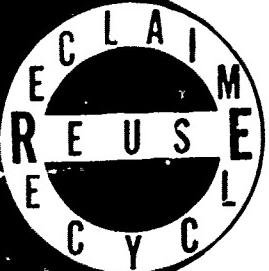
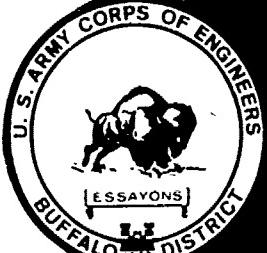
The next regular issue of the PUREWATER PRESS will include the following:

1. A bibliography of waste treatment literature.
2. Technical notes and definitions of wastewater treatment terms.
3. Questions and answers.
4. Federal and State pollutant standards.
5. And more.

SPECIAL ISSUE BEING PREPARED

A special issue of the PUREWATER PRESS is being prepared describing several alternatives to be considered at the next public meeting. Details of that meeting will also be given in the special issue.





THE PUREWATER PRESS

SPECIAL
ISSUE

A WASTEWATER MANAGEMENT NEWSLETTER

DECEMBER
1972

OF BROCHURES AND MEETINGS

For the past eighteen months the Buffalo District of the Corps of Engineers has been studying wastewater treatment methods for portions of northeastern Ohio. The goal of the study, being conducted in cooperation with the State of Ohio, is to provide the State with a plan that will result in improved water quality in the Chagrin, Cuyahoga, and Rocky Rivers, and in Lake Erie. The citizens of Ohio will determine the use to be made of the study results; the Corps of Engineers is providing only a planning service to you. The regular editions of the Purewater Press examine developments in the study and try to clarify the concepts involved.

Twelve alternative plans have been developed. They include plans using traditional treatment methods and several using treated wastewater as a fertilizing water on croplands and other land areas. Means of treating urban stormwater runoff and reusing byproducts are also being studied. The brochure, The Quest For Quality, details some of the concepts and the alternatives.

We must have thoughts on the alternatives and concepts from a variety of people in the localities affected. For this reason, a series of informal, discussion-type meetings is being held with civic groups, farmers, industries, political leaders, and others. We cannot reach all the concerned people at such meetings, however, and we are therefore holding three open, informal public meetings. At these meetings, listed below, we hope to reach even more of the people. We ask you to please meet with us to discuss the study to date at the site most convenient to you.

After meeting with you and determining the best possible plans, the Buffalo District will prepare a report to be offered to the State and the people of northeastern Ohio. We have been fortunate in having fine staff, contractors, and local help in developing the alternative plans, but it is imperative that you have the voice in choosing the plan or plans best suited to your needs. Again, please come talk with us about any and all aspects of our work in wastewater management in northeastern Ohio.

7:30 P. M.

TUESDAY, 12 DECEMBER

J.S. KNIGHT AUDITORIUM

UNIVERSITY OF AKRON

AKRON, OHIO

7:30 P. M.

WEDNESDAY, 13 DECEMBER

CLEVELAND ENGINEERING SOCIETY

3100 CHESTER AVENUE

CLEVELAND, OHIO

8:00 P. M.

THURSDAY, 14 DECEMBER

PHILOMETHIAN MIDDLE SCHOOL AUDITORIUM

77 EAST WASHINGTON STREET

CHAGRIN FALLS, OHIO

THE PUREWATER PRESS

NUMBER
THREE

A WASTEWATER MANAGEMENT NEWSLETTER

MARCH
1973

DRAFT REPORT DELAYED

We had planned to have the draft report on the Wastewater Management Study prepared by March 1. However, the reformulation of the final suggested plans is taking more time than anticipated. The draft report should be completed about April 1 with publication about May 15, following an internal Corps of Engineers review. Copies of the full draft report will be distributed to Departments of the State of Ohio and local governmental and planning agencies. A summary of the report will be distributed to the general public. Comments received on the draft and summary will be included in the final report that should be published about July 1. Public meetings and workshops will begin in May to provide additional citizen input. The final report will be submitted using normal procedures to Congress and Governor Gilligan for use in continued planning to meet the standards set by the Federal Water Pollution Control Act Amendments of 1972.

STATUS REPORT

Publication of the "Special Issue, Purewater Press," accompanied by the brochure "The Quest for Quality," in December 1972 initiated a thorough public review of the Wastewater Management Study for the Cleveland-Akron Metropolitan and Three Rivers Watershed Areas.

Thirteen workshops, three public meetings, several TV, radio, and newspaper interviews, and a press conference were conducted between November 27 and December 15, 1972. Those original meetings generated requests for an additional 15 presentations of the study, and requests continue to come in. The District staff has responded to all requests, and anyone who still has questions is encouraged to contact the District Office in Buffalo.

The public response to the wastewater management alternatives can be categorized as follows:

1) Groups within the Three Rivers Watershed area are interested in the Corps planning effort, so long as it does not impede the progress of current state and local planning for treatment facilities.

2) The residents and governmental bodies within the counties west of the Three Rivers Watershed Area, within which prospective land treatment areas have been identified, generally oppose providing a wastewater treatment service for metropolitan areas. However, some of those communities are considering land treatment as an alternative to other types of advanced treatment for their own wastewater.

3) Some residents and governmental bodies within the strip-mined area southeast of the Three Rivers Watershed area, within which land restoration with wastewater treatment sludge is proposed, enthusiastically support such a program. Various local groups are presently examining the potential for pilot land reclamation projects. The State of Ohio is also actively interested in these projects. (See Local Action in Stripmined Areas).

The Buffalo District Staff and their consultants are currently refining three alternative wastewater management plans. The three plans consist of various combinations of components similar to those in the twelve earlier developed alternatives.

The first plan (Plan A) duplicates the treatment plant network identified by the Northeast Ohio Water Development Plan. The treatment plants are designed to achieve levels of treatment satisfying the "No Discharge of Pollutants" objective of the Federal Water Pollution Control Act Amendments of 1972. The second plan (Plan B) utilizes land treatment in suitable non-urban areas of the Three Rivers Watershed area, while duplicating the treatment plant locations from the Northeast Plan in the urban areas. No wastewater is transported outside the Three Rivers Watershed in Plan B. The third plan (Plan C) modifies Plan B by including the transport of wastewater from Cleveland to land treatment areas in Huron, Richland, Seneca, and Crawford Counties. Detailed descriptions of each of the three plans will be included in the summary report to be distributed in May to recipients of "The Purewater Press."



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PAPER

LOCAL ACTION IN STRIPMINED AREAS

The following consists of excerpts from an article printed in the Harrison News Herald of January 18, 1973, reprinted with the permission of its editor, Mr. Milton Ronsheim.

Pilot Project Planned For Soiltone

A pilot project to bring soiltone (digested sludge) to Harrison County took a step toward reality at a meeting last Thursday when it was agreed to pool the efforts of three groups interested in the idea.

Getting together with Hanna Coal Company President Ralph Hatch were representatives of the Harrison County Farm Bureau, Consolidation Coal Company and Continental Oil. The third group not at the meeting but working on the pilot project, is the County Extension Office, represented by Howard Bennington, who has secured a promise of help from the Ohio State University School of Agriculture heads.

The meeting had been requested by the Farm Bureau group to determine the position of the coal company, whose pipeline has been suggested as the means to bring the soiltone from Cleveland to the county.

The concept of bringing the Cleveland soiltone was recently reactivated by the U. S. Army Corps of Engineers working out of Buffalo, NY. A report from the Corps is to be submitted to State officials

in Columbus in February (now to be submitted in May), and it will recommend that Harrison County be favorably considered for the project.

The Farm Bureau, whose members have shown a decided interest in the idea, is organizing a representative countywide Committee made up of other groups and individuals in an effort to promote the project. Steps are underway to expand the committee.

Mr. Hatch reiterated Hanna's position when the proposal was first brought up about three years ago, stating that the company would not go along with the program without the approval of the local Health Department, Planning Commission, County Commissioner, etc. He also emphasized that should the project materialize the soiltone would be made available for farmers and others in the county who desire it. Hanna would not hold exclusive use.

The meeting concluded, holding that a pilot project utilizing truck haulage, would be the logical way to approach the idea. Consolidation Coal and Hanna, working with the Farm Bureau Committee and the Extension Service, will take steps to further the pilot project angle.

All attending were in general agreement that proper monitored shipments of soiltone would be a benefit to Harrison County, and would help solve some of the enormous problems facing the Cleveland area.

WILL THE CORPS IMPLEMENT ANY OF THE PLANS?

One of the frequently raised questions at public meetings and workshops, as well as in correspondence from Ohio citizens, concerns the Corps of Engineers authority to implement regional wastewater management plans.

The Corps has no authority for implementation of any component of the regional wastewater management systems, not even those early-action demonstration projects that will be recommended in the final report. The survey study of wastewater management alternatives provides a planning service for use by local governments and the State in implementing the regional systems required by the Water Pollution Control Act Amendments of 1972.

The choice of wastewater treatment alternative remains with the local governments, with the approval of the State and Federal Environmental Protection Agencies. Funding must be sought through traditional channels. Any increase in Corps participation would require Congressional action.

FILMS AND BROCHURES AVAILABLE

The Buffalo District Corps of Engineers has copies of a film, "The Living Filter," depicting a series of studies on land treatment at the Pennsylvania State University. We are happy to make this film available to interested groups. Also, we have additional copies of the brochure, "The Quest For Quality" and will send them to interested groups and individuals.

ATTACHMENT 6

Documentation Related to Section F

ATTACHMENT NO. 6

DOCUMENTATION RELATED TO SECTION F

<u>ORGANIZATION</u>	<u>REASON FOR AND/OR SCOPE OF INVOLVEMENT</u>
League of Women Voters at Kent League of Women Voters of Northeast Portage County	These two groups were active study participants since the study's inception. They should be specially recognized for organizing and conducting a most useful workshop at Ravenna which provided public input to the study.
League of Women Voters - 3 Rivers Group of Northeast Ohio	Active study participant
Citizens for Land and Water Use, Cleveland Metropolitan Area	Active study participant, broadcasted views over John Carroll University Radio Station
League of Women Voters at Cuyahoga Falls	Interested participant, assisted in setting up public meeting at Cuyahoga Falls
Canton Chamber of Commerce	Received copy of feasibility report, concerned about receiving effluent from Cleveland for land application in Stark County
Mansfield Chamber of Commerce Ashland and Richland County Interests	Concerned about use of their land for treatment of Cleveland waste. Received an informal public meeting. They approved land disposal but only as an alternative to treat their own wastewater.

<u>ORGANIZATION</u>	<u>REASON FOR AND/OR SCOPE OF INVOLVEMENT</u>
Northeast Ohio Area-wide Coordinating Agency, Cleveland	Member of Coordinating Committee. Attended public meeting and received individual briefing about study
Tri-County Regional Planning Commission	Provided input on local problems and attended workshops during study
Cuyahoga County Regional Planning Commission	Provided land use input to study, received individual briefing about study
Lorain County Officials	Attended August briefing related to formulation of early alternative plans
Geauga County Officials	Attended August briefing related to formulation of early alternative plans
Lake County Officials	Attended August briefing related to formulation of early alternative plans

ORGANIZATION

Akron City Officials

Attended August briefing related to formulation
of early alternative plans

Dept. of Public Utilities - Cleveland

Has a program in progress involving strip mine
restoration using sludge. Personally briefed
about wastewater management study

Public Utilities Dept., Akron

Contacted by Contractor during planning
process attended briefings and public meetings

Three Rivers Watershed District

Member of Interagency Coordinating Committee.
Constructive critical comments during study.
Attended almost all workshops and public
meetings. Assisted in setting up meetings
and briefings. Showed a great deal of interest
and informative material came from this organi-
zation which is vitally interested in water
quality problems. There was also participation
in workshops

Sierra Club

Reviewed study and raised many good questions for
a special briefing of this group

Department of Natural Resources, Ohio

Member of Interagency Coordinating Committee.
Constructive critical analysis and comments.

<u>ORGANIZATION</u>	<u>REASON FOR AND/OR SCOPE OF INVOLVEMENT</u>
Environmental Protection Agency, Ohio	Member of Interagency Coordinating Committee Constructive critical analysis and comments. Attended public meetings
Environmental Protection Agency, U.S.A.	Member of Interagency Coordinating Committee - had an observer at the public meeting in Cleveland
Huron County Reg. Planning Committee	Helped organize and participated in a workshop for this western area. Generally negative early response to land treatment
Crawford County Ag. Ext. Service	Organized and participated in several workshops in this western area.
Crawford County Reg. Plan. Comm. - 28 Jan	Personally briefed about alternative plans
League of Women Voters - Cuyahoga Falls	Helped organize and conduct workshop in Cuyahoga Falls area. Interested in combining work of WWM with Cuyahoga River Restoration Study

ORGANIZATION

REASON FOR AND/OR SCOPE OF INVOLVEMENT

Seneca County Reg. Plan. Comm

Conducted meeting/workshop. Some interest in local sewage treatment on land. Skeptical of parts of plan (e.g. amounts of water able to be drained off treatment lands)

Medina Cooperative Extension Service

Organized and conducted large presentation/ workshop meeting on water quality problems. Large forum (300 attendees) provided for discussion of wastewater management study

Cleveland University Consortium

Greatly concerned with solving pollution problems in the Three Rivers Watershed this group participated and sponsored a special workshop

Willard Rotary Club

Worried that land treatment and storage in their western area would not be economically and socially acceptable. The Club sponsored a discussion meeting which aired the concerns of the locals and cleared up many misconceptions

ORGANIZATION

REASON FOR AND/OR SCOPE OF INVOLVEMENT

New Washington County Ag. Dept.

Requested special briefing for a workshop organized by that group

Norwalk Kiwanis Club

Request special briefing and workshop

Cuyahoga River Water Quality Committee -
Industrial leaders

Met with study contractor and Buffalo District staff on several occasions during the course of the study

Ohio Farm Bureau Federation Inc. -
Columbus Farm Bureau

Special briefings and assisted in workshops and position statements related to the local orange organizations

Consulting Engineers of Ohio

Special briefing

Hanna Coal Co.

Discussed the desire of Hanna Coal Co. to reclaim strip mined areas and activity participated with pilot studies of sludge application to strip mines

ORGANIZATION

REASON FOR AND/OR SCOPE OF INVOLVEMENT

O.S.U. Ag. Ext. Service - Columbus

Reviewed technical reports of study and offered assistance in developing critical analysis of land treatment alternatives

Cuyahoga Valley Association

This group is interested in conserving and improving the Cuyahoga River Valley. Water quality is a major concern and they participated in a workshop and announced on progress in their newsletter

Ohio Environmental Council

Made up of over 30 organizations in Ohio concerned with environmental matters. Arranged for a special workshop following formulation stage public meetings

Muskingum Conservancy District

Arranged for special workshop to discuss strip mine application of sludges

ORGANIZATION

Izaak Walton League

Concerned with preserving a natural environment, the I.W.L. participated in at least one workshop and lent important views, with the Sierra Club, on environmental matters

U. S. Soil Conservation Service

Member of Inter Agency Coordinating Committee, constructive critical analysis and comments

REASON FOR AND/OR SCOPE OF INVOLVEMENT

ATTACHMENT 7

Documentation Related to Section G

ATTACHMENT NO. 7

DOCUMENTATION RELATED TO SECTION G

<u>LETTER</u>	<u>PARTICIPANT'S VIEW</u>	<u>PARTY</u>
10 Jan 72	Interested in pollution on a general scale - National	Student at the University of Akron
18 Jan 72	<ol style="list-style-type: none">1. Supports comprehensive long-range planning for conservation and development of natural resources.2. Specific report comments:<ol style="list-style-type: none">a. Increased recycling and reuseb. All alternatives evaluatedc. Coordination with all water pollution control efforts, existing plansd. Approach to problems on an entire watershed basise. Environment and economy, quality of lifef. Reliability3. Pertinent questions asked:<ol style="list-style-type: none">a. Keeping land disposal within the watershedb. Effects on groundwaterc. Reduction of stream flowd. Use of effluent on coal strip arease. Quantity of land for land disposal (concern expressed)	League of Women Voters at Kent
18 Jan 72	<ol style="list-style-type: none">1. Approve of study and search for innovative ways to handle wastewater.2. Recycling concept - approved.3. Large number of alternatives	League of Women Voters - Three Rivers Group of Northeast Ohio

<u>LETTER</u>	<u>PARTICIPANT'S VIEW</u>	<u>PARTY</u>
	<u>Specific Comments</u>	
	Recognition of multiobjective planning potential - Water Supply - Recreation Questioned taking water outside Lake Erie Watershed? Septic tank regulation - Groundwater	
9 Feb 72 "Citizens for Land and Water Use"	1. Mistakes made in training, choosing operators of sewage treatment facilities. 2. Apathy of the public toward the problem. 3. The importance that the public should care.	"Citizens for Land and Water Use"
10 Feb 72	No view expressed	Alliance Review
11 Feb 72	Concerned with treatment plant at Furnace Run	James Jackson
20 Feb 72	Interest in water pollution; requested information	Miss Barbara James
10 Mar 72	General letter of coordination, sent to:	
	1. N. E. Ohio Area-Wide Coordinating Agency 2. Tri-County Regional Planning Commission 3. Cuyahoga County Regional Planning Commission 4. Lorain County Planning Commission 5. Geauga County Planning Commission	

<u>LETTER</u>	<u>PARTICIPANT'S VIEW</u>	<u>PARTY</u>
	General letter of coordination, cont'd	
6.	Lake County Planning Commission	
7.	Cleveland City Planning Commission	
8.	Akron Dept. of Planning and Urban Renewal	
9.	Cleveland Dept. of Public Utilities	
10.	Cleveland Metropolitan Park District	
11.	Akron Public Utilities Department	
12.	Akron Metropolitan Park District	
9 Mar 72	Organized workshop, brought in political influences, people running for office - (attach copy)	League of Women Voters of Northeast Portage County
7 Mar 72	Sludge pumping from Cleveland to Columbiana County - Feasibility study misconception	B. Bostwick
28 Mar 72	General interest in abating pollution - also -	League of Women Voters - Lake Erie Basin Committee
	1. Flood plain management	
	2. Scenic rivers	
	3. Protection of ecological resources	
	4. Less channelization	
	5. Groundwater protection	
	6. Increased reclamation	
	7. Recycling and reuse of water	
	8. Encourage non-structural management	

LETTER

PARTICIPANT'S VIEW

PARTY

Support of Great Lakes Basin Commission's Planning Activities - Importance of public input from the start

Specific Corps interests that they approve -

1. Public participation from the beginning
2. Broad implications to ecology and environment
3. Wide range of alternatives, new and innovative approaches

3 Apr 72 Request for copy of feasibility report

City of Mansfield
Concerned with possible Stark County irrigation

Greater Canton Chamber of Commerce

Mansfield Area Chamber of Commerce

29 Mar 72

Does not like aesthetic implications of general land disposal - particularly Cleveland's wastewater

20 Apr 72

<u>LETTER</u>	<u>PARTICIPANT'S VIEW</u>	<u>PARTY</u>
24 Apr 72	Did not want to use Cleveland's wastewater, institutionally and because of the vast land requirement - changed their opinion on the concept. Possible use for their own waste.	Mansfield Area Chamber of Commerce
9 May 72	Complimentary letter	Mansfield Area Chamber of Commerce
20 Aug 72	Request for presentation - general interest indicated - Kent State University	The City of Akron
19 Oct 72	Request for address by District Engineer relative liquid waste disposal and regionalization	Ohio Environmental Health Association
12 Dec 72	Request for Information	Willard Chamber of Commerce
13 Dec 72	From Edith Chase, indicating concern over low flow augmentation in Cuyahoga River particularly between Lake Rockwell & Kent, careful attention to siting sewage plant facilities, emphasis on reuse of water, recovery of resources	Edith Chase, League of Women Voters

<u>LETTER</u>	<u>PARTICIPANT'S VIEW</u>	<u>PARTY</u>
26 Dec 72	Opposing transmittal of sewage from Cleveland/Akron/Three Rivers Watershed Areas to Huron County	Paul R. Smith, Huron County Resident
26 Dec 72	Opposing transmittal of sewage from Cleveland Akron/Three Rivers Watershed areas to Huron County	Margaret Schkinner, Huron County Resident
27 Dec 72	Requested information for Re-publication	Public Information Officer Great Lake Basin Commission
4 Jan 73	Opposing plans to transport wastewater from Cleveland-Akron area to Huron County, letter reproduced in this report.	Mr. & Mrs. James E. Adelhan Norwalk, OH
5 Jan 73	Strongly opposed to Alternative Plan Nos. 2, 4, 6, 8, 9 and 12	Huron County Regional Planning Commission
10 Jan 73	Opposing dumping of waste from vicinity of Cleveland, OH, into parts of Huron, Seneca and Crawford Counties, OH.	Elmer J. Horning Norwalk, OH
11 Jan 73	Indicating concern of relative location of storage basins to family farming operation and livelihood	Mrs. Joseph Shell New Washington, OH
11 Jan 73		Huron County Dept. of Health
12 Jan 73	Cover letter forwarding resolution indicating opposition.	Huron County, Board of Commissioners

<u>LETTER</u>	<u>PARTICIPANT'S VIEW</u>	<u>PARTY</u>
16 Jan 73	Letter opposing treatment of Cleveland/Akron Metropolitan and Three Rivers Watershed District area's sewage by land treatment methods in the northern Crawford County area	Village of New Washington, OH
23 Jan 73	Opposing plans involving spraying sewage on Huron County farmland	Greenwich, OH Grange
24 Jan 73	Raising Questions and giving comments	Letter from Robert A. Becker, Senior Environmentalist to Seneca, County Regional Planning Commission with 1 Feb 73 response by District Engineer, Buffalo
24 Jan 73	Arranging for special workshop session to discuss wastewater treatment, land disposal, approximate 20 persons from County Extension Service office. Letter indicated Ohio Dept. of Natural Resources & Ohio Environmental Protection Agency would also attend. List of 16 specific questions were included - subsequent meeting on 6 Feb 73 proved very beneficial	Cooperative Extension Service
Jan 73	Resolution opposing land treatment and requesting that all work on the project be discontinued immediately	North Fairfield, OH

<u>LETTER</u>	<u>PARTICIPANT'S VIEW</u>	<u>PARTY</u>
12 Feb 73	Opposing piping Cleveland's Waste to Huron County	New London, OH, Grange
5 Mar 73	Copy of letter between Farm Bureau representatives indicating open-minded approach being taken by that group	Ohio Farm Bureau Federation Incorporated
10 Mar 73	Opposing transport of Cleveland's sewage to part of Crawford County	Pomona, OH, Grange
19 Mar 73	Advising Buffalo District of correspondence received to date by Ohio State Department of Natural Resources.	State of Ohio Department of Natural Resources

ATTACHMENT 8

Correspondence

U.S. Army Corps of Engineers
1776 Niagara St.
Buffalo, New York 14207

Mr. Donald H. Liddell
Chief Planning Branch.

Dear Mr. D. H. Liddell:

I am an graduate student at the Department
of Civil Engineering, the University of
Akron, OHIO.

I send with interest the invitation
of the meeting on waste management
in January 10-12 1972.

I would be glad to come to the
meeting as I am working now at
the University of Akron on research
project "Alternatives and Economic
Studies for strengthened management of
waste pollution in the Cleveland area
using incineration".

I will be very glad to send you a
copy of the study when it will be
finished. However I am sending
you a research study which I finished
last year at the University of Akron
under the name "Rathfeld and flood
in North eastern Ohio".

I would be very glad if you could
send me a copy of the study:
"Alternatives for planning wastewater
for Cleveland - Akron metropolitan
and three towns under that name".
I include the Appendix which I
hope will help me in my research
study on the coming subject.
Thank you very much for
your kind consideration.

Yours very truly
Vassilis PAPARAKIS
67 Martin Ave
Pittsford, NY 14535

10/10/71



1/25/72
Cleveland Engineering Society

CLEVELAND ENGINEERING AT SCIENTIFIC CENTER
3100 Chester Ave. * Cleveland, Ohio 44114 (216) 361-3100

JOSEPH H. GEPFERT
Managing Director

January 17, 1972

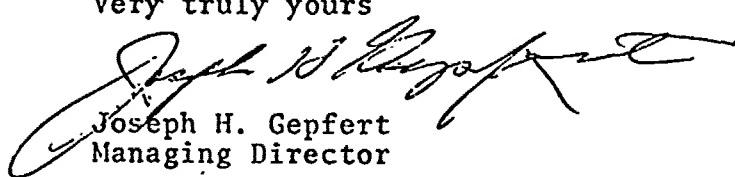
Donald M. Liddell
Chief, Planning Branch
U. S. Army Engineer District Buffalo
1776 Niagara St.
Buffalo NY 14207

Dear Mr. Liddell:

We should appreciate receiving, without cost, a supply of the reports on the Wastewater Feasibility Study and the Cuyahoga River Restoration.

We should like to make these available to engineers in general.

Very truly yours


Joseph H. Gepfert
Managing Director

RECD ON

1/25/72
J. H. GEPFERT



LEAGUE OF WOMEN VOTERS

108 South Water Street, KENT, OHIO

January 18, 1972

I am Mrs. Alan Coogan, Environmental Quality chairman of the League of Women Voters of Kent. Our League has studied water resources since 1956 and stands firmly in support of measures which promote comprehensive long-range planning for conservation and development of water resources. We are pleased that studies are now being made of the Cuyahoga River and the northeastern Ohio areas public and governmental attention is focused on the need to restore this river and gain important knowledge on management of all of our water resources. We appreciate the opportunity to comment tonight and thank the Corps of Engineers for soliciting comments from interested parties and citizens during the preparation of these reports.

The report--Alternatives for Managing Wastewater for the Cleveland-Akron Metropolitan and Three Rivers Watershed Areas--should be commended for several points:

- (1) Moves toward increased recycling and reuse
- (2) Evaluation of all alternatives
- (3) Coordination with the many water pollution control efforts, especially with the Northeast Ohio Water Development Plan.
- (4) Approach to problems on a watershed basis for achievement of high water quality standards at reasonable overall costs.
- (5) Consideration of impact on the environment and quality of life as well as economic development.
- (6) Consideration of the need for provisions in case of equipment or process failure.

We have several comments and questions. In making decisions about waste disposal, effects on air, land, and water must all be considered. Certainly wastewater should be dealt with on a watershed basis and it would seem most reasonable to treat and dispose of wastewater within the watershed. In choosing land disposal sites for wastes, we are concerned with the effects on groundwater. If coal strip mine areas are chosen to be reclaimed, the utmost care must be taken to ensure that acid mine drainage will not contaminate future uses. Could old sand and gravel strip mine areas within the Three Rivers area be used for land disposal, thus aiding reclamation?

Overall costs of construction and operation must be considered. It is important to have economic return from reuse of treated waters and recovery of valuable materials (including crops). Methods of financing and implementation must be clearly defined.

We would like to ask how much the stream flow will be reduced during the critical summer months when the most people would use the river parks. Will low flow cause problems of odor and usage to stream life? Will the value of park lands along the river be impaired by reduced stream flow? We wonder if the effect of some of the proposals will be to send most of the river downstream in a pipe. Could the carefully purified effluent be returned to the upper reaches of the river for water supply and low flow augmentation? We also question the need

-2-

for the loss of 7 to 11 thousand acres of existing recreation lands in northeast Ohio where acreage of recreation lands is already well below recommended levels.

We agree that land is a valuable resource and caution should be used in the amount taken for reservoir sites or land disposal; 350 square miles seems excessive for the total land disposal alternative. Where high quality parks and development already exist in the area, care should be taken not to degrade it (e.g. the East Branch of Rocky River). In choosing among alternatives we hope that decisions will be made not only on the basis of costs but that consideration be given to aesthetic factors and the impact of project facilities on surrounding areas.

Thank you.

Alma L. Coogan (M.W. Hinsch)
1993 Brookwood Lane
Kent, Ohio 44240



RIVERS GROUP OF NORTHEAST OHIO

ROCKY RIVER CUYAHOGA RIVER CHAGRIN RIVER

January 18, 1972

Colonel Hanson, members of the Corps of Engineers, Ladies, and Gentlemen:

I am Mrs. Henrik Kylin, 2695 Route 82, Aurora, Ohio. I am speaking for my co-chairman, Mrs. William M. Hutchison, 1224 Quilliams Rd., Cleveland Heights, Ohio. We represent the League of Women Voters Three Rivers Area Sub-committee of the League of Women Voters Lake Erie Basin Committee.

We have watched with interest and approval the fact that a group is studying and searching for innovative ways of handling the ever increasing amounts of waste water on a regional basis.

We also approve the concept that waste water and its constituents should be regarded as resources to be restored and utilized beneficially rather than as waste products to be discarded.

We are in hearty agreement that a wide range of alternatives should be examined by the public and their officials before decisions are finalized.

Because of the enormity and complexity of the problems in the Cleveland-Akron Metro area we urge that this study be carried through to completion. Findings of this study could and should be incorporated into present programs of upgrading the waste treatment to meet existing state water quality requirements. However we recognize that we must move beyond present programs to Restore, Reclaim, and Recycle waste water if we are to achieve and maintain quality environment for the people of this area.

Specifics: Land based plan.

1. Water can be returned to upper reaches of rivers to be used again and again as it goes downstream.
2. Less land would be needed for water supply reservoirs.
3. Water recreation can be increased in the rivers.
4. Productive use can be made of the nutrients before cleaned water is returned to the stream.

D
U
H

5. If land based methods are used we question the advisability of taking wastewater outside the Lake Erie Watershed. Are there no soils in the Lake Erie Watershed that could benefit from land disposal and purify the water?

6. We urge state legislation controlling septic tank installations and maintenance where local authorities fail to regulate them until such time as all areas are sewered.

Questions which the public may ask in the upper reaches of the rivers:

1. Would the number of land disposal sites planned in Alternatives L-1 and C-1 have any adverse effects on the Akron underground water supply?
2. Will any areas remain on individual septic tanks in the future?

In closing we repeat our interest and approval of this study, its continuing development, and its correlation with the Cuyahoga River Restoration and the North East Ohio Water Development Plan. Thank You.

NEC

OHIO ENVIRONMENTAL COUNCIL

248 Old W. Wilson Bridge Road
Worthington, Ohio 43085
Phone: 614-846-2790

25 Jan 1972

Colonel Ray S. Hansen
U. S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Hansen:

I was glad to attend the recent public information meeting on the Waste-water Management Program of your office held at the Federal Building in Cleveland on 19 Jan 1972. I have recorded my comments on the yellow questionnaire which was mailed to you in a separate envelope.

The reason for writing this letter is to lend my support to your efforts educating the public and concerned citizens about your work in northeastern Ohio.

One of your engineers mentioned to me that your office would like to conduct some seminars or work sessions with university people. At this time I cannot speak for our entire Council, but I think we would be available to help you set up these sessions. If you are interested, simply drop me a line and I will present the idea at our next council meeting on 18 Feb 1972.

We may also be available to help set up public information meetings for citizen's groups. I will appreciate your comments on these ideas.

Please keep us informed of your activities. I have enclosed a list of members; you may use this list to mail information to.

Sincerely,

Lynn Edward Elfner

Lynn Edward Elfner
Executive Director

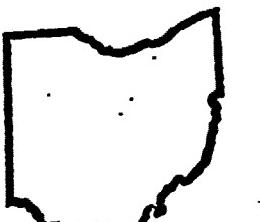
Enclosure *P.R.T.G*

L.C.WR

*This is included with
our mailing list.*

CITIZENS FOR LAND AND WATER USE

Water
Is Not Free
To Modern Man



"Water is Life"

Dilution
Is No Longer The
Solution To
Pollution

February 9, 1972

I am Mrs. James H. Angel, Chairman of Citizens for Land and Water Use, Cleveland Metropolitan Area.

In our second segment for John Carroll University we want to call your attention to the imperfect working of all pollution control installations.

The jet-aerator septic tank properly installed operates like a miniature sewage treatment plant. To save electricity some people turn off the aerator. Some people neglect to add the dry chlorine once a month to the system. Many septic tanks are not cleaned as often as necessary.

Well designed municipal sewage treatment plants often fail to operate according to the Engineer's design for lack of well trained qualified personnel. Some employees of waste water plants are political appointees who do not have the necessary qualifications for their jobs.

Air pollution control devices are not properly maintained. A glaring example is the recently publicized Ormet Corp. in Clarington, Ohio. In 1965 the plant was spending \$25,000. a year for repairs and replacement of covers which are designed to keep smoke and fumes from escaping. In 1971 \$155,000. was spent on covers. The plant is still polluting.

FEB 17 '72

Received by *G*
Filed by _____

Mrs. Angel

Mrs. James H. Angel, 1284 Elm Ave., Cleveland, Ohio 44107 216/221-1059

There are myriads of heating systems using the wrong type of coal. Countless obsolete incinerators that have virtually no smoke and fume control. We witnessed the strong lobbying to avoid replacing old incinerators at the City of Cleveland Air Pollution Control Committee Meetings.

The large amount of pollution from automobiles that our technology has no mass-implementable solution.

Most important of all we do not make our representative form of government work. It has been asserted by government officials that our laws are only enforced on Citizen demand. Therefore it is reasonable to assume that the main reason we live in all this pollution is because enough Citizens do not keep in touch with their public officials to keep our existing pollution control laws consistently enforced. We gripe to each other but not to the people who can enforce the laws.

We can change some of this by availing ourselves of the opportunity to communicate our wishes to the U.S. Army Corps of Engineers for their current Wastewater Management Study.

Congress responded to the will of the people by changing the procedure of the U.S. Army Corps of Engineers to protect and improve the environment as well as navigation.

Under the Environmental Protection Agency Act, the U.S. Army Corps of Engineers is designated to carry out their assignments with total consideration for the improvement of the environment.

The Corps wants to better understand the wishes of the people so they can improve their planning and information process. The Corps wants and needs more facts and ideas from the Citizen about wastewater management. Address your suggestions to the:

District Engineer
U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York
14207

I often wonder if we could sever the lower 48 with the money spent on unused engineering studies.

The taxpayer needs a lever to force a speedy implementation of engineering studies.

Upon the construction of a new sewage treatment plant the taxpayer also needs a lever to force a municipality to correct all other installations that adversely effect a good wastewater treatment plant operation. Namely:

Stop the infiltration of storm water into the sanitary system.

Where separate sewers exist check all connections so that storm water goes into the storm sewers and sanitary sewage goes into the sanitary sewer.

Where combined sewers exist proper maintenance of storm sewer system.

Frequent cleaning and up-dating of catch basins.

We see many catch basin grids that have been covered over with macadam by the streets department, making cleaning and maintenance impossible.

We should advise our Congressmen that when Federal Funds are being used for a wastewater system the municipality receiving these Federal Funds has to correct all other installations that can and do adversely effect the efficiency of the wastewater plant being installed. Failure to insist on this total cooperation is what has spiraled the cost of pollution control in the past.

I want to bring to your attention the comic strip titled, THE WIZARD OF ID, that appeared in the Sunday February 6, 1972 Plain Dealer.

A home-owner was approached by Rodney, the King's representative of the sanitation department. Rodney asked the home-owner, "Are you presently hooked up to the sewer?" The home-owner said, "No." Rodney said, "Would you like to be?" The home-owner said, "I guess so." Rodney said, "Okay, that'll run you 500 bucks a frontage foot." The home-owner said, "Wait'll

I check with the Mrs." The home-owner came back to the door and said, "We decided we'll wallpaper the outhouse instead."

The humor of this comic strip is sad because too often in the past public officials and otherwise reliable professionals have scared the general public with exaggerated cost figures.

We can systematically and economically control our pollution by making existing systems work.

The City of Lakewood has just removed 23 septic tanks from the Clifton Lagoon area that should have been removed 50 to 65 years ago. Was this delay to connect into the existing STP because the home-owners were frightened by the unknown cost of a lift station to pump their sewage up into the sanitary sewer system to be treated? Actual cost per hook-up was \$1,143. per home. For 50 foot lots this was a cost of \$23. per frontage foot. A 30 foot lot cost \$40. per frontage foot. Home-owners who do not pay the \$1,143. by May 1972 can make installment payments with a 5% carrying charge. There are people who spend more than this on a two week Caribbean cruise.

We have many doubts about our present sewage treatment systems.

When in doubt tell the truth.

Let us face the truth that most secondary sewage treatment plants do operate consistently at only 50% removal on a twelve month basis.

This is a difficult thing to attack because some plants do not take data often enough. Add to this the truth that the plant operator evaluates his own plant operation. Hence we get such glowing reports from secondary treatment plants of 92% to 95% removal when the receiving stream knows differently. Too often it is hushed up when a batch dump of pollutants knock out the secondary treatment taking anywhere from a week to three weeks to recover. Thus polluting the receiving stream all during the recovery time.

Package sewage treatment plants serving newly developed areas should be properly serviced after being turned over to the County or Municipality. Lack of maintenance of these plants causes a lot of unnecessary pollution.

The many scattered small sewage treatment plants should be combined into one or more regional or area wide system.

In the present situation it is not humanly possible to give proper inspection.

We want our State and Federal governments to monitor all sewage treatment plants and insist on maximum performance.

Then let's us get down to the business of making all municipalities get all of their sewage to the plant to be treated.

It is ~~a~~ indecent as well as not economically feasible to pollute our water supply with our sewage, then pay the cost to purify it for drinking.

Help make our wastewater treatment plants work by writing your suggestions to your District Engineer
U. S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York
14207

This is Mrs. Angel, Chairman, Citizens for Land and Water Use at Station WUJC, 88.9 FM on your radio dial, John Carroll University.

JAMES S. JACKSON

2574 IRA ROAD
AKRON, OHIO 44313

(Bath twp., near Cuyahoga
river)

Phone : (216) 666-1552

Feb. 11, 1972

Col. Ray S. Hansen,
Corps of Engineers,
1776 Niagara st.,
Buffalo, N. Y. 14207

Dear Colonel Hansen:

Just today, for the first time, I have had an opportunity to read portions of the very comprehensive interim report which your office recently made concerning the Cuyahoga River.

Last week, I was elected president of the Cuyahoga Valley association, which is an expansion of the Peninsula Valley Heritage Association and which hopes to unify the various efforts toward preserving and improving the condition of the valley area and the river itself.

As you may be aware, a current threat of increased pollution comes from the proposal that a package sewage disposal plant be built on Furnace Run, just above I-271 to handle the sewage from the proposed Miletti Coliseum and a large real estate development nearby.

Several of us went to Columbus last Tuesday to express views to the Ohio Water Pollution Control Board. The Miletti people, too, made a full presentation and seem to have support from the state health department and from county commissioners. I shall enclose an article from the Beacon Journal reporting the session.

I wonder whether your department might care to express an opinion to the Pollution Control Board.

I am leaving tomorrow for a few days in central New York state. It is just possible that I may phone you or drop in on Tuesday or Wednesday on my return trip to see whether we can do anything to coordinate efforts for the improvement of the valley.

Sincerely,

James S. Jackson

INTS

1128 East Wayne Avenue
Wooster, Ohio 44691
February 30, 1972

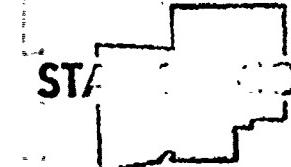
U. S. Army Engineers District Buffalo
Donald M Liddell
Chief, Planning Branch
1776 Niagara Street
Buffalo, New York 14209

Dear Mr. Liddell:

I recently became very interested in the problem of water pollution and control. I have tried to keep up on the articles in the magazines and papers but would still like to find out more. I was wondering if it would be possible to receive copies of the Wastewater Feasibility Study and any other information. Any information will be greatly appreciated immediately. I would appreciate a response one way or the other.

Sincerely,
Barbara Gammie

Gammie
Sent 2/23/72
TRV



ST. CLAIR COUNTY REGIONAL PLANNING COMMISSION

624 COUNTY OFFICE BUILDING CANTON, OHIO 44702 454-5651

President: Richard R. Hinterleiter
Director: J. Dale Cawthorne

February 24, 1972

Mr. Donald M. Liddell, Chief
Planning Branch
U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Mr. Liddell:

I was present at the Akron meeting at which time the Three Rivers Watershed Plan for "Alternatives for Managing Wastewater" was presented.

We have a copy of the Summary Report, but would like to have the complete report.

We have briefed Stark County municipalities and county officials on the contents of this plan. We are vitally interested and would like to be kept informed of your progress and the results of the newly authorized engineering study on this project.

Thank you for your cooperation.

Sincerely,

J. Dale Cawthorne
Director

JDC:m1k

Paint TRV 3/17/12

 The League of Women Voters of Northeast Portage County

March 9, 1972

Colonel Ray S. Hansen
District Engineer
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207.

Dear Colonel Hansen:

Thank you very much for all the fliers on the Cuyahoga River Restoration Study and the Waste Water Management Plans plus the slide of land based disposal. We had our meeting last night at which we presented the Restoration Study, the Waste Water Management Plans and the Northeast Ohio Water Development Plan. We invited all village councils, boards of township trustees, zoning boards, boards of public affairs and mayors in our League area. We also included the county commissioners and the fourteen running for commissioner in the primary. We were able to reach about forty people; a good league representation plus all those running for office, and one running for state senator.

While we did not have the impact we hoped, we had good response from those running for office. We were able to push for regional planning in water management and gave the basic picture of the land-based disposal as well as the conventional methods. There were not too many questions asked by future officials, but the league members brought out the strong points in their questions.

I guess the only way is to go to each council and board meeting. It is my understanding that each local government does not have a copy of these studies. Please correct me if I am wrong.

The citizens' group in Mantua has organized now and will be incorporated under the name of Upper Cuyahoga Association. It will work toward State Scenic River. Also, the Ohio Natural Areas Council is considering purchasing the Mantua Swamp for preservation. Even the Mantua Park Board is thinking along these lines.

Thank you very much for the information on the Nature Trail Symposium publication. I have ordered several copies for the above group and for League.

Please call on us when you want people notified of future meetings. We'll continue to try for public attendance.

Sincerely,

J. J. Hines (Mrs. Hines)

E. L. Chairman

N. E. Portage County League of Women

F. D. G.
P. L.

QUESTIONNAIRE

WASTEWATER MANAGEMENT STUDY

TO BETTER UNDERSTAND THE PEOPLE'S WISHES AND IMPROVE OUR PLANNING AND INFORMATION PROCESS, WE NEED MORE FACTS AND IDEAS. THEREFORE, WE WOULD APPRECIATE YOUR ANSWERING ANY OR ALL OF THE FOLLOWING QUESTIONS.

1. Please print your name, address and the organization (if any) that you represent.

Mrs. Henrik Kylin

2695 Route 82

Aurora, Chic 44202

(OPTIONAL)

N.E. Portage County League of
Women Voters E.O. Chairman

2. What do you believe are the most serious water related pollution problems and where are they located? (e.g., septic tanks in suburbs.) Use number 8 if you need more space.

Problem or Need

Location

- | | |
|--|---|
| a. <u>Treatment facilities which
are inadequate.</u> | <u>Rapidly growing villages
and cities.</u> |
| b. <u>Combined sewers.</u> | <u>Wherever they occur.</u> |
| c. <u>Septic tanks-
State control is needed.</u> | <u>Suburb and rural areas.</u> |
| d. <u>Industrial waste which is not
pretreated.</u> | <u>In municipal systems
where it is not treated.</u> |
| e. <u>Small wastewater plants improperly
operated.</u> | <u>Trails, camp grounds,
frankenstein developments!</u> |

3. What do you feel about the use of each of the following wastewater treatment methods? For which do you feel you need more information?

- a. Conventional water-based systems.

For the immediate future these will necessarily be the type facility built. Each should be built in such a method and at such a site that it could be incorporated in a land-based system or combined system in the future. The sooner local and state officials can visualize incorporation of new conventional facilities into future land operations, the more rapidly such plans will be accepted.

Continued on other side

b. Land-based systems.

It is so stimulating to read about innovative and imaginative planning for recovering, recycling and reusing water! Couldn't present new plants treat the water where they are and the effluent be piped to land disposal sites? This would lessen pipe line breakdown hazards and cut (see below)

c. Combination systems.

These would be good as the land disposal systems develop. Combined systems would be more adaptable to all situations.

initial costs.

Land-based disposal would return the water to the upper reaches of the rivers, a must if they are to be used for recreation as the Restoration Study and the N.E. Ohio Plans indicate.

Are there probable solutions to the odors of holding basins or irrigation fields? Where are the new possibilities for disposal sites within the Lake Erie Basin?

THANK YOU FOR TAKING TIME TO COMPLETE THIS QUESTIONNAIRE.

regional planning and facilities and to the realization that we must pay to have clean streams and sufficient good water.

Yours,

I am writing you in
regards to your proposal to
bury slaves from Cleveland
since it's the strip mines
in Columbiana County

Last summer I headed a
protestation drive in Columbiana
Co. with the help of the
Puritan Club.

The petition stated that
we were opposed to the
burying of slaves into
Columbiana Co.

I sent copies of the petition
to the Ohio State Dept of
Health under Mr. Gardner
and the E.P.A. and one local
representative John W. Wago

of the state legislature
like as would the other
property owners of this County.
To be enlightened on this
subject.

B. (Benton) R.

268 65 N Shore Dr.
Beloit Ohio 46010

Will the sludge be dumped
directly on the pits?
Has it ever been done before
any place else, so we can
see what will happen
in the future because of
this action?

I belong to a group called
The Environmental Defense
Fund and they send you
news of what your folks are
doing in this area. I would

COUNTY OF STARK

JAMES A. STURKETT
COUNTY ENGINEER

COUNTY OFFICE BUILDING
CANTON, OHIO 44702

TEL. 454-2631

March 17, 1971

F. J. Clarke
Lieutenant General, U.S.A.
Chief of Engineers
Washington, D. C. 20314

Subject: Pilot Wastewater Management Program - Feasibility
Study ~ Cleveland-Akron Metropolitan and Three
Rivers Watershed Areas

Sir:

The feasibility study on subject report has been reviewed by this office. I am in accord with your conviction of a national need for an innovative approach to prevent further deterioration of our lakes and streams.

However, in my opinion, the broad application of alternatives L-1 or C-3 involving land disposal of waste water into those counties outside of the study area would not be acceptable to the people currently occupying the land. Even if further sampling should prove that the adverse effects of these alternatives could be ameliorated, the political impact may render it a hopeless dream. The dislocation of people; the limitation of future growth; the disruption of tax base; potential failures in plant management; and the degradation of land and environment would all become the strong points of opposition.

(Continued)

"PLAN TODAY FOR TOMORROW'S PROGRESS"

The pollution problem of the Three Rivers Watershed, which covers over 350 square miles of their land (L-1), is not uppermost in the minds of people seventy miles away in another watershed. I believe they will expect public authorities to perform the solution on the polluted watershed; and would recommend the Water Disposal System of Advanced Treatment Facilities as identified in your study as alternative W-1.

I may also suggest that other alternatives, not mentioned in your report, may be taken under consideration. My thinking on the study of the problem would first consider how the land and water became polluted over the passing years. The uncontrolled developments of speculative enterprises, the scilich use of land; and the apathy or ineptness of public officials to establish the protective covenants for the world of tomorrow, are the contributing factors to the disaster. Ohio laws pertaining to land development, especially on storm water drainage, have not kept pace with modern needs. The zoning of rural land is still within the power of Township Trustees who are not conditioned to evaluate projected land uses; or to have the slightest knowledge or regard for the protection of the economic base of surrounding communities. Over the passing years the antiquated laws of Ohio have permitted the destruction of parts of the Three Rivers basin by the undisciplined use of land without services. Engineers have warned public officials for more than forty years of the future consequences of inaction on the problems of navigation and flood control.

Who else legislature has been sitting in the worn out chairs of the routine politician for too many years. The use of the people's land in high density areas should have been prohibited years ago. The destruction of our transit systems and our cities could have been prevented if our growth had been managed in orderly fashion. I believe that after your own personal visit of the study area, in introspect, you would agree that the degradation of our land and water is the net result of the 'money' game. Speculators come and go and public officials are left with the enormous task of providing sewers, water, police protection, schools, parks, playgrounds, roadways, drainage facilities, and health services. Many years of dialogue and red tape will pass before full services can be realized within the new subdivisions and commercial areas. In the meantime, the rising crime rate and the failure of the building industry to provide housing for the greatest need of the middle and low income people may render rural living a horrible nightmare for the more affluent.

However, the efforts of yesterday are moot now. We have arrived! Second guessing or ridicule will not avail our efforts to provide a solution, but we have learned some lessons from the past which may dictate the consideration of new alternatives. I suggest that any plan for improvement must first be preceded with regulations to prevent re-occurrence. We must formulate some discipline over human behavior to curb irresponsibility and greed. We must find a means of retarding the migration of people into the large metropolitan cities.

(Continued)

Best Available Copy

... Your ... port indicates an almost doubling of population in fifty years. Why should this be? Why not base an alternative on reducing the population and prepare entire new small cities, each with its safe sanitation facilities? Each small city can have the neighborhood school as well as the neighborhood park and we can start walking again. This would reduce the pollution of the expected doubling use of automobiles by year 2000.

Could it be possible that your plan may produce a utopia that would more than double the population and become polluted all over again by migrants seeking it? Have not the problems of our large cities indicated that possibly we should limit the size of cities? This may be difficult by law but it can be instituted by tearing down blighted areas. In practice, the vacation of people from slum areas has always been followed by poorer people moving into them. As long as we have these slums there is always a landlord who will exploit and rent to the poor who are seeking any refuge, and perpetuate a miserable existence. Would it not be better to provide whole new towns and employ them to help build and occupy them?

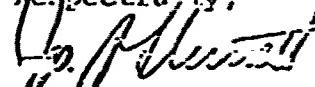
The process of building limited new model cities could solve many of the ills that beset our nation today. It would provide a better family atmosphere for the poor, and employment that would develop their skills. It would also be an assist to the Highway Departments in providing housing for dislocated people. This suggested alternative essentially requires an immediate tear-down of all blight and decay within the existing cities and land put to proper use.

(Continued)

I am not exactly over-joyed in writing this type of negative to your report, but in my thirty five years of experience in public works I have become impatient to the planning processes. The implementation of laws and projects are long overdue. I am also very sensitive of the fact that the human practices which control the Yahoga are continuing unabated in other areas. The rules we are not controlling new growth, but merely cataloging and projecting wild growth as the speculator designs it.

I shall be happy to discuss this matter further if you so desire, but my advice in this letter is not intended to impugn your work; but rather to avoid embarrassment later when the project has assumed a more important status; and more individuals will be involved and the interest more intense.

Respectfully,



Joseph A. Sturrett, P.E.
Stark County Engineer

JAS/jew

cc: Governor John J. Gilligan
Congressman Frank T. Bow
Stark County Commissioners
Senator Ralph Regula
William H. Nye, Director
(Dept. of Natural Resources)

Chamber of Commerce
35 Park Avenue West
Mansfield, Ohio 44902
(Telephone 419/522-3211)

March 13, 1972



Dr. Robert Gidez
OCB, Wastewater Task Force
Room 2601 Temple B
Washington, D.C. 20315

Dear Dr. Gidez:

The Mansfield Area Chamber of Commerce is vitally interested in your current study of waste treatment methods to be used in regional attacks on water pollution. We understand from personal discussion with Dr. John Sheaffer and articles in the Mansfield News Journal and Cleveland Plain Dealer that parts of Richland and Ashland Counties are candidates to receive waste water from N. E. Ohio's 3 rivers watershed which includes the 7 county Cleveland-Akron Metropolitan Area.

Since we represent a majority of the business and professional interests in the Richland County area we feel it is important for us to understand how your proposals, if implemented will affect our area.

We therefore would appreciate your cooperation in sending us a copy of your reports and other available background information.

Sincerely yours,

Edward W. Alberty
Edward W. Alberty
Executive Vice President

cc Dr. John Sheaffer



CITY OF MANSFIELD, OHIO

RICHARD A. PORTER
MAYOR

PETER A. ZIMMERMAN

DIRECTOR
PUBLIC SERVICE AND SAFETY

April 3, 1972

Mr. Donald M. Liddell
Chief of Planning Branch
Department of Army
Buffalo District Corps of Engineers
1776 Niagara
Buffalo, New York 14207

Dear Mr. Liddell:

Please send me a copy of your Feasibility Study on the Akron-Cleveland Waste Water Project at the earliest possible date.

Thank you for your attention to this matter.

Yours truly,

Beverly F. Hairs
Municipal Development Director
City Building Annex
103 W. First Street
Mansfield, Ohio 44903

BFH/db

PLAT
11/6/72
PAV

17

Resolution

Stark County Commissioners

Adopted April 4, 1972

COMMISSIONERS

LAVERT E. DALE
Roster D. FREEMAN
JERMAN W. SPONSELLER

The Board of Commissioners of Stark County, Ohio, met in regular session this date, a quorum being present.

Mr. Dale moved the adoption of the following resolution:

WHEREAS, the Pilot Wastewater Management Program - Feasibility Study - Cleveland-Akron Metropolitan and Three Rivers Watershed Areas suggests alternatives of land disposal of waste water in Stark County, Ohio, and

WHEREAS, we have reviewed the report and received comments from the Stark County Engineer, and

WHEREAS, such alternatives have been proposed without any contact with or input by elected representatives of Stark County, Ohio, and

WHEREAS, this Board of Stark County (Ohio) Commissioners has severe reservations and apprehensions to alternatives L-1 and C-3 involving land disposal of waste water within this County.

NOW, THEREFORE, BE IT RESOLVED:

1. That this Board express its opposition to such alternatives until the U. S. Corps of Engineers provides detailed information on those alternatives to the Stark County units of government; and until such alternatives receive approval from such units of government, and

2. That the County Administrator inform the U. S. Corps of Engineers of this Resolution, and supply copies of this Resolution to all interested or involved parties.

Mr. Sponseller seconded the Resolution and upon roll call the vote resulted as follows:

MR. FREEMAN -- YES MR. DALE -- YES MR. SPONSELLER -- YES

CERTIFICATE

I, William Keen, Stark County Administrator, hereby certify to be a foregoing to be a true and correct copy of the Resolution adopted by the Board.

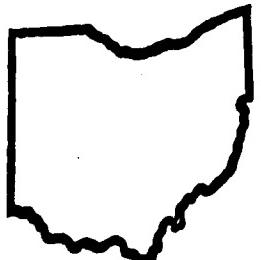
W. Keen

CORPS OF ENGINEERS

BUFFALO DISTRICT

CITIZENS FOR LAND AND WATER USE

Water
Is Not Free
To Modern Man



"Water is Life"

Dilution
Is No Longer The
Solution To
Pollution

April 15, 1972

This is Mr. James A. Angel, Chairman of Citizens for Land and Water Use, Cleveland Metropolitan Area.

Two weeks ago I saw a commercial on television justifying the cost of our space program. The commercial stated that, "Two cents out of every tax dollar put us on the moon." It said, "More money is spent on cosmetics than space. More money is spent on pet food than space. Astronauts in space looking at earth marveled at the beauty of our vibrant Earth compared to other planets." The commercial ended by saying, "Love our Earth, it's the only place we have."

We are celebrating another "Earth" week that is supposed to stimulate the public to demand action for a cleaner environment.

If two cents out of every tax dollar put us on the moon, why can't we spend two cents out of every tax dollar and achieve a clean, healthy environment?

According to the spenders work a standard forty-hour week, \$1-million worth of tax money is now being spent for construction of new sewage disposal facilities in the United States every hour.

Practically none of this money is buying what most taxpayers think they are paying for.

Best Available Copy

Disease-carrying viruses are not being removed from waste water the sewage facilities are pouring into our streams, lakes, and oceans.

Carcinogenic substances known to provoke cancer are being dumped into waterways that subsequently become sources of drinking water for homes and public places.

Most deceptive of all is the common practice of designing sewage disposal plants so as to divert raw sewage, not treated in any way, into watercourses whenever something goes wrong with the disposal pumps or the other plant machinery requires repair. Automatic bypass devices were, in fact, required as a "safety" measure up to two years ago.

When the disposal process is working, solids it separates from the water are not permanently removed as pollutants from the environment but are only temporarily set aside. They settle as thick black ooze on the bottom of processing basins, whence they must be taken periodically and otherwise dealt with later. In a few places, the sludge is collected and sold as fertilizer. Milwaukee does it and markets it through normal interstate commerce channels. But most of it is either incinerated--ro-burning noxious fumes to the atmosphere--or once again set adrift in the water to prematurely age river, lake, and ocean beds with layers of fertilizing accelerants of eutrophication. The most elaborate incinerator is in operation anywhere today serves the city of Denver, where the people are now violently protesting if the pollutants it vents into the mountain air. New York City dumps its sludge into the sea, from tug-drawn barges subsidized by taxpayers all over the country through grants from President Nixon's Environmental Protection Agency (EPA)--a practice that EPA intends to discontinue just as soon as a practical alternate method of disposal can be arranged. U. S. Senator Clifford Case of New Jersey is forcing the issue with proposed legislation to stop dumping of any waste into any ocean or into the Great Lakes within five years.

Those few who know the truth about sewage disposal seldom talk boldly about it in public. Their justification for silence is that it is a disservice to distress people unless immediate action can be taken to provide non-rising protection. The closest approach any highly placed government bureaucrat has made to full disclosure was in a speech recently delivered by Eugene F. Jensen, operations chief in the water quality control office of the EPA. Mr. Jensen told an American Society of Civil Engineers Conference at Los Angeles: "I am ashamed to admit that...the old "ways" in the field of water pollution control appear to be losing. The people and Congress appear to have except by us. We seem willing to settle for too little....to build sewage treatment facilities--but we fear expenditures that exceed what is absolutely necessary to maintain sufficient stream quality. We tolerate poor operation. We are satisfied with less than modern treatment techniques, and confine our new, advanced, waste treatment technology to pilot plants and research laboratories. When the public asks for treatment to permit reuse of waste water, we hold back and point out only the weaknesses of the new treatment technology. We take some enforcement actions, but we do not make "unreasonable" requests. Is "reasonableness" an excuse for weakness, or "cowardice" another word for timidity? The cases in which a major polluted stream or lake has actually been restored can be counted on one hand.

The problem will not be solved merely by enactment of legislation, no matter how well conceived or how expertly drawn....o, the professionals in the field of water pollution control, are going to have to change ourselves, our concepts, and our way of doing things...First and foremost among, we must stop being satisfied *still* with yesterday's technology. No technology is available, until it is transferred into actual treatment facilities, it is of little value. Just because we have relied on trickling filters and activated sludge plants in the past does not mean that we should

continue to do so today.

You will object, perhaps, that these processes have been well tried and have proved reliable. Yes, they have proved reliable in by reliable one means that they are known to break down and are subject to erratic performances."

Our agency however strives for 100% efficiency. The leading on the "concern" file 100% sewage efficiency.

In one of our public statements we pointed out that some pollution control facilities that professionals and public officials claimed operated at 95% to 98% efficiency actually operated at 50% efficiency on a yearly basis. Our polluted streams verify 40% sewage treatment plant efficiency.

The agency was established with the objective of getting to the moon. Effective pollution control in the Cleveland Metropolitan Area had been delayed for years by the bickering among the various municipalities.

Professor John T. Scheaffer, associate director of the Institute of Urban Affairs at the University of Chicago recently accomplished the impossible by bringing local officeholders in twelve cities and townships of MacGregor County, Michigan, into one harmonious company supporting a single sewage disposal system to serve all their communities together.

After the creation of EPA, one of the agencies that now constitute it—the Federal Water Quality Administration of the Department of the Interior—gave the MacGregor project the biggest single project grant in its history: \$2-million for the opening phase of an experiment.

The project returned a return to the ancient principle of treating wastes as natural resources and returning them to the earth to contribute to the regeneration of life. Instead of dumping sewage into waterways, a practice MacGregor now shares with hundreds of other localities, Scheaffer proposed to pile the wastes inland to storage lagoons and thence to a network of irrigation sprinklers installed on presently barren acreage.

seed for conversion into cropland. FWA backed the project as a pioneer attempt to operate such a waste disposal system as a self-supporting economic enterprise, with the cost of the system's operation to be paid from the sale of the fruits of the fields.

Mr. Chesser had received a personal letter of praise from President Penn after the Volkswagen coup became public knowledge. The letter put him in a good position to argue for adoption of the principle of land disposal now in throughout the country. Acceptance of the principle would inevitably require the crossing of town and township boundary lines, perhaps the crossing of county and in some cases even state lines. The Corps of Engineers was one of the few agencies in the country with established Congressional authority to deal in such terms.

Last year members of Citizens for Land and Water too toured the waste water irrigation project at Pennsylvania State University. The most stubborn obstacle in Mr. Chesser's future path is the curious failure of academe to teach or even discuss the Penn State experience in sanitary engineering courses. The depth of professional disinterest is further indicated by absence from waste water treatment textbooks of any description of the mechanisms or procedures employed in land disposal of sewage effluent. Richard R. Parkes, associate professor of hydrology at Penn State and one of the leading authorities of land disposal irrigation, laments: "Even in cases where individual engineers favor irrigation schemes as a means of ~~treatment~~ treating sewage, their enthusiasm and zealots are frequently discouraged by state officials charged with the responsibility of reviewing and approving designs and operating procedures." The backwardness is undoubtedly influenced by the requirement that spray irrigation operators be trained in ground-water hydrology, geology, agronomy, and sanitary engineering. Parkes has been able to find only two states--Pennsylvania and Illinois--with

hydro-ecologists on their health department staffs.

This complaint about the delinquencies of the states is echoed in the 700-page report released early last month by Ralph Nader's Center for the Study of Responsive Law. Publication of this document, WATER LAW, followed a two-year study that condemned water pollution control in the United States as a "miserable failure" and attributed a major share of the responsibility to federal government willingness to permit individual states to cripple federally financed improvements designed to improve water quality across the country.

People think of human wastes or from exhausted corn stalks and dead stalks or fallen tree leaves. All contain nutrients too valuable to be lost; all should be returned to the earth. Human waste disposal will not reach this desirable state until an intensive effort is made to change popular thinking. We may have to amend the language we use in dealing with the matter. Present-day waste disposal terminology is filled with unhappy clichés. The watery constituents of sewage are not water but "effluent". Wastes are "dumped" into streams or otherwise "not rid of". Truly modern sewage disposal systems entail very little clean, but how many citizens spend much time around such facilities? To most people the word "sewage" is equated with the word "stink". The public has a "hang-up" in its approach to waste disposal. The tension comes from exaggerated fears of not only odors but "flies, mosquitoes, rats of disease, or of depressed land values in the countryside" around irrigated fields. An honest and open public information policy would be capable of rallying grassroots support because concepts of reclaiming waste water and nutrients for recycling and reuse by plants and indirectly by the animals, protecting groundwater recharge to replenish diminishing water supplies, improving soil fertility, and abating pollution in rivers and lakes all have broad appeal to the public at this stage in our history.

Further, the prospect of reduced sewage treatment costs by harvesting forest and agricultural crops and game makes sense to the layman. If conceived of on a large enough scale, spray irrigation could have a major impact on regional economy.

Spray irrigation disposal of appropriately treated sewage obviously requires land, and purchase of land is not now permissible with funds from federal water quality control grants. This limitation tends to perpetuate routine and accepted sanitary engineering practices. The underlying logic "must" can be used for engineering studies, design of pipelines, buildings, separation tanks, etc. It cannot be used to purchase land wherein lies the physical-chemical-biological treatment mechanism relied upon in irrigation projects to remove waste waters. In both instances, a biological complex or living filter is involved, but one is used in "government approved" tanks and related facilities, while the other is used within "government unapproved" soils.

The faster the Corps of Engineers can get geared for the new environment repair assignment, the more money will be saved for the taxpayers. Every additional working-day hour that passes costs 1-million in out-of-date technology.

Conress expressed the will of the people when it designated that the environment must be protected and enhanced by all Corps of Engineers projects.

One agency not up to the task because that one agency had the qualified man power and dedication to make space equipment work at 100% efficiency.

The Corps of Engineers is dedicated, but needs comparable qualified man power to clean our environment.

If you think the Corps is the One Agency to clean our Earth, please write to your Congressman and ask him to provide the Corps with the necessary qualified man power.

- 8 -

rite today. Help your Congressman put your two cents in.

Let's prove we love our earth by making it a healthy place to live.

This is from James A. Mirel, Chairman of Citizens for Land and Water

[redacted] at John Carroll University, Station WOJC - FM 88.9 University Heights,
Ohio.

THE STANDARD OIL COMPANY

MILLER STREET, MANSFIELD, OHIO 44902

April 24, 1972

Mr. Donald Liddell
Chief of Planning Branch
U.S. Army Corps of Engineers
Buffalo Branch
1776 Niagara Street
Buffalo, New York 14207

Dear Mr. Liddell:

I want to thank both you and Dr. Hopson again for presenting such an informative review of your Cleveland-Akron Waste Water Study along with the latest developments. We sincerely hope that you are able to identify suitable treatment sites for the Cleveland-Akron effluent in the Lake Erie Watershed.

The clarity of your presentation was such, that many people commented to us after the meeting, that while they were opposed to land treatment earlier, now feel that this process may be the solution to the Richland County Regions long term water pollution problems.

Enclosed is a copy of the newspaper article describing the meeting which appeared on Page One of the Mansfield News Journal. While the headline writer for the News Journal continues to use the term "Leach", the reporter you spoke with, Pat Heydinger, did clarify the exact process as being one of land use rather than leaching.

I am also enclosing an additional copy of the Chamber's letter to you stating our position and a copy of the news release we issued after the meeting.

I appreciate your cooperation in keeping me posted on any new developments in the Three Rivers Waste Water Project and sending me copies of any reports you publish in the future along with notices of any future public hearings regardless of where they are held.

I want to thank you and Dr. Hopson again for coming to Mansfield. We certainly enjoyed the opportunity to associate with you.

Sincerely,

R. H. Nielsen
Vice President
Regional Development
Mansfield Area Chamber of Commerce

BHJ:jr

c: Bruce Bailey, President, MACC
Ed Alberly, Executive Secretary, MACC

enclosures

11:50 10:30

Leach Bed Verdict Due in Early '73 CoG Group Told

By PAT HEYDINGER

Richland and Ashland county residents should know by February, 1973, whether portions of their counties will be used as land irrigation sites for treated effluents from the Cleveland-Akron metropolitan area.

Donald M. Liddell, chief of the planning branch of the Buffalo District of the U.S. Army Corps of Engineers,

said the corps is currently undertaking a serious "recommendation" study, based on the primary feasibility study which listed parts of the two counties as possible irrigation sites. This second study will recommend what areas are best suited as irrigation sites, based on the lowest cost land usage and "what will benefit the most people."

Liddell, speaking before over 220 persons at the Mansfield Area Chamber of Commerce Early Bird Breakfast, said "there is even a possibility that not any, or very little of this area will eventually be recommended. But whether it is or not, I strongly recommend local governments to study the land disposal method for possible legal use. I feel it is the ultimate answer."

* * *

Using slides and a film, Liddell pointed out that studies have indicated land areas in the three-rivers area around Cleveland-Akron metropolitan areas are suitable as possible irrigation sites.

"However," Liddell said, "I feel there is a strong chance that land areas in Richland and Ashland Counties could be used as treatment sites for wastes from the Akron area alone. The land area in question would not be as great in your case, but there would still be land used."

Liddell said before any such land irrigation and land sewage disposal would be put into effect, "state, local and federal governments would have to agree on the plan." He estimated the earliest since a plan could be in even minor operation in this area would be "around 1985."

He added that the "recommendation study" would be given to Congress, which would in turn make the final decision as to approving the project.

DONALD M. LIDDELL

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Leach Bed Verdict Due in '73

(Continued From Page 1)

Liddell and Ninnian Edward Hopson, associate professor of sanitary engineering at Buffalo State University, said the "clay and silt composed soils" are basically "good for this type of thing." Liddell added the reason the Muskegon (Mich.) area's sandy soil was chosen for the parent project was to "build up the soil with humus" in that area.

Liddell, in an interview following the breakfast, said human food crops have not and are not currently selected to be grown on the irrigated lands. Primarily the irrigated lands in Australia and Europe, along with a pilot project land at Penn State University, are used for forage-type crops.

"However, I do think there is a plan under study at Muskegon which would (Please Turn to Page 8)

take the water which has already been filtered once through the land, and then spray it on corn or wheat crops for irrigation," he said.

Liddell added that studies are currently being undertaken on the acceptability of spraying the treated wastes on human crop land, "but there is nothing definite yet." He said human food crops could be grown, he felt, because the bacteria and wastes fertilize and are taken up by the soil "and do not attack the plant itself."

* * *

Other points brought up by Liddell in the interview and talk were:

— Disease would not be a factor because the wastes would be chlorinated and 99 per cent of all pollutants taken out before irrigation begins;

— Cost of land disposal sewage treatment would be approximately \$47 per capita (million gallons) as compared to \$51 for conventional chemical treatment and \$74.00 for a combination of physical and chemical treatment;

— The proposal is not a "leach bed" concept, but instead a "land use" concept since land is used and the benefits, including clean water, are received and full sewage treatment is given;

— The land sewage irrigation system is actually less dangerous because the land takes care of any remaining harmful pollutants;

— The first "feasibility" study was just that, a "feasibility study," with not sufficient time taken to check out all the ramifications of sending the treated sewage to the Richland and Ashland County areas.

* * *

The Chamber also released a statement following Liddell's talk and said "The Chamber feels there are treatment sites available in the Lake Erie Watershed which will have a far smaller effect on the surrounding area."

"The Chamber, however, recognizes the potential long range benefits of the land treatment method and understands this method may well be the sewage treatment process that could

best handle the requirements of the Mansfield area. Therefore, they have not taken a position against the method itself. They are in fact encouraging local officials to consider treatment for locally generated effluent."

"The chamber favors continuing research directed toward alternative methods for waste water treatment and will keep an open mind to such alternatives and proposals in seeking solutions to waste water problems in North Central Ohio," the statement said.

April 19, 1972

Mr. Ronald Liddell
Chief of Planning Branch
U.S. Army Corps of Engineers
Buffalo Branch
1776 Niagara Street
Buffalo, New York 14207

Dear Mr. Liddell:

After reviewing the feasibility study "Alternatives for Managing Wastewater in Cleveland-Akron Metropolitan and Three Rivers Watershed Areas Summary Report", July 1971, the Mansfield Area Chamber of Commerce has taken the following position regarding the treatment sites described in Alternates L-1 and C-3:

The Chamber takes a specific stand against the use of southern Richland-Ashland County sites for land disposal purposes as described in the above report. The justification for this stand was taken from pages 42 through 45 of the report dealing with Alternate L-1, which has the most significant effect on the Richland-Ashland County area.

In order to take an objective stand the Chamber analyzed the Corps own evaluation of the impact on treatment site areas in arriving at its position. In addition, we would like to point out that the treatment area outlined in L-1 contains a vast recreational area. It serves not only the Mansfield area but the entire State of Ohio (Highland State Forest, Pleasant Hill Reservoir and State Park, numerous camp grounds, carous, libraries and ski areas, etc.).

We feel that there are treatment sites available in the Lake Erie Watershed which will have a far smaller effect on the surrounding area.

The Chamber however, recognizes the potential long range benefits of the land treatment method and understands that this method may well be the large treatment process that could best handle the requirements of the Mansfield area. Therefore we have not taken a position against the method itself. We are in fact, encouraging local officials to consider land treatment for locally generated effluent.

We hope that you will agree that the draw backs of using Southern Richland-Ashland County as treatment sites for effluent from Cleveland and Akron far out weigh the advantages. We will therefore pick new treatment sites in the Lake Erie Watershed that do not have the disadvantages.

Sincerely,

B.H. Nielsen
B. H. Nielsen
Vice President
Regional Development

cc:
Frank Miller, President, MACC
Ed Allerty, Executive Secretary, MACC

THE MANSFIELD AREA CHAMBER OF COMMERCE
MANSFIELD • OHIO 44902

April 20, 1972.

TO: AREA NEWS MEDIA

From: Bruce S. Bailey, President and
Bert Nielsen, Vice President, Regional Development Department

For: Immediate Release

The Mansfield Area Chamber of Commerce Board of Directors at its March 24th meeting took a stand against the use of the Richland-Ashland County sites for land disposal as described in the Corps of Engineers "Alternatives for Managing Waste Water for Cleveland-Akron Metropolitan and Three Rivers Water Shed Area Summary Report, July, 1971," Alternatives L-1 and C-3.

In order to take an objective stand the Chamber analyzed the Corps own evaluation of the impact on treatment site areas in arriving at its position. The Chamber feels that there are treatment sites available in the Lake Erie Watershed which will have a far smaller effect on the surrounding area.

The Chamber, however, recognizes the potential long range benefits of the land treatment method and understands that this method may well be the sewage treatment process that could best handle the requirements of the Mansfield area. Therefore, they have not taken a position against the method itself. They are, in fact, ~~convinced~~ local officials to consider land treatment for locally generated effluent.

The Chamber favors continued research directed toward alternative methods for waste water treatment and will keep an open mind to such alternatives and proposals in seeking solutions to waste water problems of North Central Ohio.

STATEMENT ON LEACHED PROPOSAL

TO: DONALD M. LIDDELL
CHIEF PLANNING BRANCH
BUFFALO DISTRICT
U. S. ARMY CORPS OF ENGINEERS

MANSFIELD AREA CHAMBER OF COMMERCE
THURSDAY, APRIL 20, 1972 7:30 A.M.
MANSFIELD, OHIO

WE ARE FAMILIAR WITH THE MANY FINE WORKS OF THE U. S. ARMY CORPS OF ENGINEERS OVER THE YEARS IN FLOOD CONTROL, THE BUILDING OF DAMS AND BRIDGES, ROADS, CANALS, AND OTHER GOOD PROJECTS.

I AM SURE WE ALL JOIN IN THANKING YOU FOR TAKING THE TIME TO COME AND EXPLAIN WHAT YOU WOULD PLAN FOR OUR AREA IN THE MATTER OF CLEVELAND-AKKON SEWAGE DISPOSAL.

SO THERE WILL BE NO MISUNDERSTANDING OF THE FOLLOWING REMARKS, I WANT YOU TO KNOW THAT I AM A HOSTILE, MILITANT AND OUTSPKEN CRITIC OF THIS PROPOSAL AS IT RELATES TO THE AREA PROPOSED FOR THE RECEIVING END OF THIS PLAN OR ANY OTHER AREA WHICH COULD REACH OUR PART OF NORTH CENTRAL OHIO BY WIND OR WATER.

YOUR OWN REPORTS ARE TESTIMONY OF WHAT MIGHT HAPPEN TO OUR PART OF OHIO IF WE WOULD PERMIT THIS PLAN TO GO FORWARD. THE LAND REQUIRED FOR THIS OPERATION WOULD BE 160 SQUARE MILES OF THE MOST BEAUTIFUL PART OF OHIO (SOUTHERN PARTS OF RICHLAND AND ASHLAND COUNTIES.) HEALTH HAZARDS IF THE SYSTEM BROKE DOWN AND POSSIBLE AIR POLLUTION DANGERS INVOLVED IN THE SPRAYING. HIGH ELECTRICITY REQUIREMENTS FOR MOVING WASTES TO AND FROM IRRIGATION SITES. CROP VARIETY WOULD BE LIMITED. RESIDENTIAL AND COMMERCIAL PROPERTY WOULD HAVE TO BE ABANDONED AND SOIL EROSION AND MUDSLIDES WOULD BE ELIMINATED.

B2

STATEMENT ON LEACHED PROPOSAL

PAGE 2.

THE AREA WHICH YOU PROPOSE TO DESECRATE WITH THIS UNHOLY PLAN CONTAINS SOME OF THE MOST BEAUTIFUL VACATION SPOTS IN THE COUNTRY. PART OF IT IS KNOWN AS "LITTLE SWITZERLAND." THE MONICAN STATE FOREST, CLEARFORK STATE PARK, PLEASANT HILL LAKE, MAJABAR FARM, STATE, PRIVATE AND CHURCH CAMPSITES BY THE SCORE, LAKES, RIVERS, AND FARMLANDS.

THE AREA IS DIRECTLY INHABITED BY 12,000 PEOPLE AND THERE ARE 200,000 PEOPLE LIVING WITHIN SMELLING DISTANCE. MILLIONS OF PEOPLE USE THE AREA AS A YEAR ROUND FUN CENTER FOR BOATING, FISHING, CAMPING, SWIMMING, WALKING AND SKIING.

IN ADDITION THIS PLAN WOULD MITIGATE AGAINST THE CONTINUING DEVELOPMENT OF ALL OF NORTH CENTRAL OHIO AND ACTUALLY REVERSE THIS TREND. THIS COULD BRING ABOUT A DESTRUCTION OF OUR LOCAL ECONOMY AND THE LOSS OF JOBS AND PROPERTY.

FOR THESE REASONS WE CANNOT PERMIT YOU TO DESTROY THESE THINGS THAT ARE SO DEAR TO US. THIS ACTION WOULD INDEED VIOLATE OUR CONSTITUTIONAL RIGHTS TO THE PURSUIT OF LIFE, LIBERTY AND THE PURSUIT OF HAPPINESS AND WE WOULD HAVE TO FIGHT THIS EFFORT WITH ALL MEANS AT OUR DISPOSAL. HAVING SAID THIS, BELIEVE ME, THERE IS NO WAY WE WILL ALLOW THIS PLAN TO PROCEED HERE.

MAY I SUGGEST THAT THE CORPS BECOME MORE IMAGINATIVE IN ITS PLANNING. A DREDGING AND DEEPENING OF THE GREAT LAKES AND PIPING THE MUCK THROUGH THE ST. LAWRENCE WATERWAY TO THE GULF BEYOND THE COAST INTO THE ATLANTIC OCEAN MIGHT PRODUCE THE STORAGE OF ENOUGH WATER TO PIPELINE THIS WASTE MATERIAL TO THE WESTERN SECTION OF TEXAS WHERE IT CAN BE USED TO FERTILIZE AND IRRIIGATE COTTON FARMLANDS AND OTHER MANUFACTURING PLANTS. THIS COULD PROVIDE ADDITIONAL FRESH WATER SUPPLYING NEEDED IN THIS NEAR DISTANT FUTURE AND AVOID

STATEMENT ON LEACHEED PROPOSAL

PAGE 3.

OUR PRESIDENT HAS ASSIGNED \$3 BILLION DOLLARS TO CLEAR UP THE GREAT LAKES. -
THE CONGRESS HAS BEFORE IT OR HAS PASSED BY NOW A \$24 BILLION DOLLAR WATER
POLLUTION BILL. CUT ONE THIS - THE MONEY SHOULD BE FORTHCOMING.

TAKE THE \$5 MILLION DOLLARS ALLOCATED FOR YOUR "STUDY AND PROMOTION" OF THIS
PLAN AND USE IT TO DEVELOP ONE THAT WILL NOT MENACE OUR TERRITORY.

Sincerely

RAYMOND C. BECK

13 PARK AVENUE WEST

MANSFIELD, OHIO

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Chamber of Commerce

33 Park Avenue West
Mansfield, Ohio 44902
Telephone 419/522-3211

May 9, 1972

Mr. Donald Liddell
Chief of Planning Branch
U.S. Army Corps of Engineers
Buffalo Branch
1776 Niagara Street
Buffalo, NY 14207

Dear Don:

I am sure you have already heard from Bert Nielsen and received a copy of the newspaper article covering your visit to Mansfield. For your file, though, I've enclosed a second copy.

I wish to thank you on behalf of the Chamber for your taking time and effort to come to Mansfield to provide us with a very fine program on the proposed land irrigation process as developed by your office. We had many fine comments from our members and the public who attended, stating that you did provide for them necessary information to understand the situation and process better. You now have many more believers.

Thanks, also, for providing us with the additional copies of the wastewater study and the small, informational pamphlets.

We'll look forward to your return visit. Best wishes and our thanks to Ed Hopson for his assistance.

Sincerely yours,
Edward W. Albrecht
Edward W. Albrecht
Executive Vice President

R.W.A.
Enclosure



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FEDERAL POWER COMMISSION
REGIONAL OFFICE
26 Federal Plaza
New York, New York 10007

May 11, 1972

Colonel Ray S. Hansen
District Engineer
Buffalo District
Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Hansen:

We acknowledge receipt of your Wastewater Management Newsletter and find it most interesting and informative.

We would appreciate receiving a copy of your Wastewater Management Feasibility Report.

Thank you.

Very truly yours,

John H. Spellman
John H. Spellman
Regional Engineer

Copy of Envelope
sent 5/10/72
TAV

FILE COPY

Checked by *[initials]*
Filed by *[initials]*

"Meeting Today's Challenges" 1920 "Providing for Tomorrow's Goals" 1970



50th ANNIVERSARY

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LAKE COUNTY
CITIZENS ORGANIZATION FOR CLEAN AIR

May 16, 1972

Department of the Army
U.S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Sir:

Please send me the Purewater Press, Newsletter. Also since I am very interested in what is happening to the Lubrizol Corp. with their additive producing waste in all fashions I would like a copy of the report, Wastewater Management Feasibility Report. Thank you for your help.

Sincerely yours,
Eleonore T. Fry
Mrs. Eleonore T. Fry
26512 Forest Rd.
Willowick, Ohio 44094

*Summary Report
sent 5/26/72 TKV*

FILE COPY

Checked by *SL*
Filed

137



BOARD OF
COUNTY COMMISSIONERS
HUGH A. CORRIGAN
FRANK R. POKORNY
SETH C. TAFT

County of Cuyahoga

Cleveland, Ohio

May 23, 1973

OFFICE OF
JOHN P. MCGINTY
ENVIRONMENTAL PROTECTION
PLANNING OFFICER
1279 WEST 34th STREET, ROOM 201
CLEVELAND, OHIO 44113
241-2700 EXT. 509

The Purewater Press
c/o U. S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Gentlemen:

This is in reference to your newsletter of April, 1972.

I would like to request a copy of Wastewater Management Feasibility Report and any other information you may have available on waste disposal.

Thank you for your attention to this matter.

Very truly yours,

John P. McGinty
Environmental Protection Planning Officer

Cuyahoga County

JPM:mp

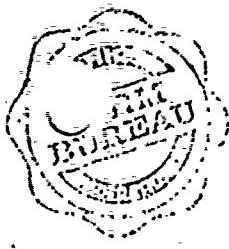
*Sent
copy of report
5/25/72
TRV*

FILE COPY

Checked by *[initials]*

Filed by *[initials]*

38



OHIO FARM BUREAU FEDERATION, INC.

245 North High Street, Columbus, Ohio 43216 • Area Code 614 • 221-1141

June 6, 1972

Mr. Donald Liddell
Chief of Planning
U.S. Army Corps of Engineers
Buffalo Branch
1776 Niagara Street
Buffalo, N.Y. 14207

Dear Mr. Liddell:

This letter is to confirm our conversation yesterday regarding meeting with landowners in the Londonville and Butler, Ohio, area on August 24.

If possible, we would like to meet for dinner at the Ramada Inn, I-71 and Route 30, with eight to ten individuals who have shown considerable interest in the study to date.

After dinner we could move to Hillsdale High School, about four miles away, for a meeting open to the residents of the area.

If I can be of any assistance in arranging transportation from the local airport please give me a call.

Thanks for your cooperation.

Sincerely,

A handwritten signature consisting of stylized initials and a surname.

Curt Dehner
Director
Local Activities

CD:pr
cc: Larry Kenda
Kirk Miller
Bob Bush
Blake Gerber

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1050 1/2 Parkway Drive
Columbus, Ohio 43212
10 June 1972

U.S. Army Engineer District, Buffalo
1775 Niagara Street
Buffalo, N.Y. 14207

Gentlemen:

Would you please add my name to your mailing list for "The Purewater Press" newsletter? I am very much interested in maintaining and restoring stream quality in our rivers and streams, and would like to obtain factual, detailed information concerning efforts being made by the Corps and other groups to achieve these goals.

Your studies on Wastewater Management Feasibility are especially interesting to me. Any information you can send on this project would be much appreciated. Are the back issues of "The Purewater Press" still available? If so, could you send me a set?

I am now working with a group of citizens who are attempting to find ways to protect central Ohio's last high-quality stream, Big Darby Creek, from impoundment. We would like to find out whether there are ways of treating the Columbus area's wastewater to obtain reusable water supplies for the city, so that it would not be necessary to convert this valuable river into another reservoir for water supply. Any guidance and suggestions you can provide will be greatly appreciated.

Sincerely,

Carol B. Stein

Carol E. Stein
Chairman
The Big Darby Creek Committee

FILE COPY
Checked by *TKV*
Filed by _____



PAPER PRODUCTS DIVISION

THE PROCTER & GAMBLE COMPANY

600 CENTER HILL ROAD CINCINNATI, OHIO 45224

June 16, 1972

The Purewater Press
Department of the Army
U.S. Army Engineer District Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Sirs:

I would like to be placed on the mailing list for the
Purewater Press.

Also, if any data or reference is available for the water
use chart, I would like to receive this material.

Thank you.

Very truly yours,

Stewart Rowe
Stewart Rowe, Manager
Professional Services

SR:ew

*for Aleray, in issue #1

FILE COPY

Checked by *[initials]*
Filed by *[initials]*

141



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

June 28, 1972

District Engineer
Department of the Army
U.S. Army Engineer District, Buffalo
1778 Niagara Street
Buffalo, New York 14207

Dear Sir:

I have recently had the opportunity to see a copy of your first issue of "The Purewater Press" and find it a most interesting publication.

Many of the subjects covered are of a high level of interest to the staff of our Municipal Technology Program. If at all possible, I would like to be placed on your mailing list for future copies of this informative newsletter.

Sincerely yours,

William A. Rosenkranz
William A. Rosenkranz, P.E.
Chief, Municipal Technology Branch

FILE COPY
Checked by *[initials]*
Filed by *[initials]*

142

R. J. C.
AUGUST 10, 1972
8168 S. BEDFORD RD.
MACEDONIA, OHIO 44356

GENERAL F.J. CLARKE
ARMY CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

DEAR SIR:

WHAT HAS HAPPENED TO THE AMERICAN INGENUITY AND RESOURCEFULNESS FOR WHICH ALL BRANCHES OF THE UNITED STATES SERVICE ARE FAMOUS?

CERTAINLY YOUR CORPS OF ENGINEERS ARE CAPABLE OF, AND WILL COME UP WITH A SOLUTION FOR SEWAGE DISPOSAL FOR THE AKRON-CLEVELAND AREA AND OTHER METROPOLITAN AREAS OF THE UNITED STATES THAT WILL REQUIRE A MINIMUM AMOUNT OF LAND TO ACCOMODATE THE FACILITIES, AND AT THE SAME TIME WILL RESULT IN THE RECLAMATION OF LAND NOT NOW SUITABLE FOR USE FOR EITHER FARM OR INDUSTRY, RATHER THAN THE DESTRUCTION OF ANY.

I STRONGLY OPPOSE THE PLAN FOR ANY SPRAYING SYSTEM ANY WHERE IN THE STATE, UNLESS THE SEWAGE IS FIRST TREATED TO THE POINT WHERE IT WILL ENRICH THE LAND. THE PLANS PUBLISHED IN A BEACON JOURNAL WEDNESDAY AUGUST 2, AND THURSDAY AUG 3, ARE PREPOSTUROUS.

IF IT IS A QUESTION OF FUNDS FOR RESEARCH FOR A REASONABLE GOOD ANSWER TO THIS PROBLEM, THEN WE CITIZENS SHOULD BE MADE AWARE OF IT.

IF WE CAN SPEND BILLIONS FOR SENDING MEN TO THE MOON, THEN WE CAN SPEND WHAT IS NEEDED TO FIND AN EXCELLENT WAY OF SOLVING THE WASTE PROBLEM.

RESPECTFULLY,

Mary R. Galion

FILE COPY
Checked by *JL*
Filed by *—*

NB

DATE: August 7, 1972

CLERK: Margaret Vogt

CITY OF MASSILLON, OHIO

COUNCIL CHAMBERS

LEGISLATIVE DEPARTMENT

RESOLUTION NO. 25 - 1972

By: Committee of the Whole

Title: A RESOLUTION expressing opposition to proposed alternatives of land disposal of waste water in Stark County, Ohio.

WHEREAS, the Pilot wastewater Management Program - Feasibility Study-Cleveland-Akron Metropolitan and Three Rivers Watershed Areas suggests alternatives of land disposal of waste water in Stark County, Ohio, and

WHEREAS, we have reviewed the report and received comments from the Stark County Engineer, and

WHEREAS, such alternatives have been proposed without any contact with or input by elected representatives of Stark County, Ohio, and

WHEREAS, this City Council has severe reservations and apprehensions to alternatives L-1 and C-3 involving land disposal of waste water within this County.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF MASSILLON, OHIO, IN REGULAR SESSION SITTING:

Section 1:

That the City Council of Massillon, Ohio, express its opposition to such alternatives until the U.S. Corps of Engineers provides detailed information on these alternatives to the Stark County units of government, and until such alternatives receive approval from such units of government.

Section 2:

That the Clerk of Council inform the U.S. Corps of Engineers of this Resolution, and supply copies of this Resolution to all interested or involved parties.

Section 3:

This Resolution shall be in full force and effect immediately upon its adoption by Council and approval by the Mayor.

PASSED IN COUNCIL THIS 7th DAY OF August, 1972

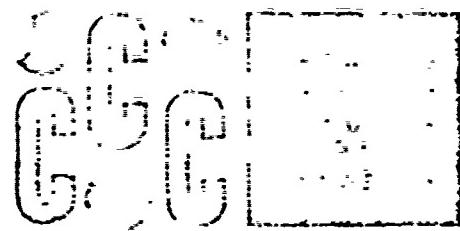
ATTEST: Margaret Vogt
Clerk of Council

Malville Horneane
President of Council

APPROVED: August 7, 1972

Mark Ross
Mayor

106



WELLS AVENUE N.W. - CANTON, OHIO 44703 * AREA CODE 216-456-7253

August 17, 1972

Mr. Donald M. Liddell
Chief, Planning Branch
Department of the Army
Buffalo District Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Mr. Liddell:

On Wednesday, August 2, 1972 the Greater Canton Chamber of Commerce hosted an informational meeting of city and county officials and business leaders from Stark and Columbiana counties. The purpose of the luncheon was to get the facts about two of the U. S. Army Corps of Engineers' study proposals for disposing of Cleveland-Akron area wastewater in Stark and Columbiana counties by employing a land use disposal system.

At the meeting a resolution was unanimously adopted that the group go on record as strongly opposing the concept of these proposals and urging that no more money be spent on such studies.

Present at the meeting were the county commissioners, county engineers, area planners and county executives of the two counties. Also in attendance were the mayors, chamber of commerce presidents and other business leaders from all of the principal cities in the two county area.

Please take appropriate steps to stop the consideration of these proposals for the disposing of the Cleveland-Akron area wastewater in Columbiana and Stark counties. Your careful consideration of our request will be greatly appreciated.

Sincerely,

Richard H. Schneider
Richard H. Schneider

President

S:bw

P.S. Enclosed are clippings of newspaper accounts of the meeting.
THURSDAY

CITY CHAMBER
CANTON, OHIO

5095 State Road
Peninsula, Ohio 44264
August 10, 1972

United States Army Engineers, District Office
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Barrett:

With considerable dismay we have learned of your plan to spray secondarily-treated sewage over large areas of Ohio. Please consider how popular it will be to sacrifice Louis Bromfield's estate when schools all over Ohio have just taken part in the Children's Crusade to Save Malabar Farm! You admit that temporary expedience may result in permanent loss. The whole idea stinks in more ways than one!

Surely a few of the billions of dollars with which we are despoiling Southeast Asia and maiming its people could be diverted to research which would result in a beneficial use of our solid wastes. If energy conversion is required, to what better use can we put our energy resources than to assure the conservation of other vital resources such as soil and water?

May I suggest that you contact the Sewerage Commission of the City of Milwaukee, P. O. Box 2079, Milwaukee, Wisconsin, 53201. Their success in producing Milorganite, an organic fertilizer from sewage wastes, should prove that such a process is feasible and should be implemented in other areas without delay. Cost must not be a consideration when resources, both natural and human, are at stake.

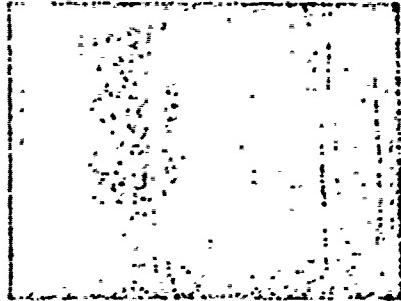
Very sincerely yours,

Lila S. Wagner

(Mrs.) Lila S. Wagner, Teacher
Ledgeview Elementary School
Macedonia, Ohio

cc: William E. Saxbe, U. S. Senator
Robert Taft, Jr., U. S. Senator
Charles A. Vanik, U. S. Representative
Beacon Journal Publishing Company, Akron, Ohio
Mrs. Ruth Colton, Treasurer, Malabar Farm Mortgage Fund

PLEASE RETURN TO OFFICE OF
SENATOR WILLIAM E. SAXBE
U. S. SENATE OFFICE BUILDING



by Ansel Adams in *This Is the American Earth*

SIERRA CLUB

MIDWEST REPRESENTATIVE

444 West Main, Room 10
Madison, Wisconsin 53703
(608) 257-4994

August 22, 1972

Mr. Parry Rought
Chief, Engineering Division
Buffalo District
U.S. Army Corps of Engineers
11 Niagara St.
Buffalo, NY

Dear Parry:

Thank you very much for your courtesy during my recent meeting with you in Buffalo, and I hope you will express my appreciation to Major Myers and to Don Lidell and the others with whom I had a chance to speak.

I am already on your mailing list for press releases (and pretty fancy press release paper it is too), but I would appreciate also receiving reports, permit announcements, and impact statements, as they become available.

Best Regards,

Jonathan P. Ela
Midwest Representative

JPE:meh

Charles J. Myers III
Major, Corp. of Engineers
Buffalo Dist.
Buffalo, New York

Dear Major, J. Myers III.

I am sorry I was unable to attend the meeting held at the Hinsdale High School where Mr. Donald Laddell was to speak and answer questions.

Either there is still some dredging on the part of the Corps of Engineers as to just what effect this spraying will have on the land or else the Akron Beacon Journal is doing a very poor job of reporting.

In the article on the meeting at the Hinsdale High School, the change of date to be sprayed was reported. It set two consecutive dates next week concerning the spraying. The second period did

8/68 S. Buffalo,
Massachusetts, Pitt
Aug. 31, 72
44056
10 3 1972
10 3 1972

effect it would have on the land. The name of reporter was not given. Date Aug 25.

I have read of areas where such a plan has been carried out very satisfactorily.

As I stated before, I feel sure that the U. S. Corps of Engineers should be able to come up with a way to solve the "knotty" problem without any appreciable destruction of land.

Yours respectfully,
Mary R. Coffin



OHIO FARM BUREAU FEDERATION, INC

245 North High Street, Columbus, Ohio 43216 • Area Code 614 • 221-1141

September 6, 1972

Mr. Donald Lidell
Chief of Planning
U. S. Army Corps of Engineers
Buffalo Branch
1776 Niagara Street
Buffalo, New York 14207

Dear Mr. Lidell:

Thank you very much for your cooperation in attending the meeting in Ashland August 24th.

You answered many questions that helped clear up much of the gray area surrounding the project.

I will look forward to hearing from you regarding meetings in the other counties.

Thanks again.

Sincerely,

Curt Dunham, Director
Public Affairs

CD/mb

9-27-72

U.S. Army Corps of Engineers

1716 Niagara St.

Buffalo, N.Y. 14207

Gentlemen:

Would it be possible to obtain a copy of the report - "Alternatives to Waste-Water Management".

I would also appreciate being placed on your mailing list.

Very truly yours,

Don L. Peck

Environmental Quality
Southwest Niagara Hill

Mrs. M.E. Kunkle
387 Crescent Street
Pine, N.Y. 14207

NEC

OHIO ENVIRONMENTAL COUNCIL

248 Old W. Wilson Bridge Road
Worthington, Ohio 43085
Phone: 614-846-2790

19 October 1972

U.S. Army Corps of Engineers
Buffalo District
Buffalo, New York

Dear Sirs:

Please! Send us a dozen or so copies of your latest "Purewater Press."

I think you well know of our interests in what you are doing in Chicago socially on the land treatment of sewage.

Somehow we did not receive No. 2 of your newsletter.

Also, on p.3 you mention "workshops." We would be glad to assist the Corps in these.

Give me a call if you want our help.

Cordially,

Lynn Edward Elfner
Lynn Edward Elfner
Executive Director

LEE:pk

[Handwritten signature]

November 23, 1972

1692 Preyer Avenue
Cleveland Heights, Ohio
44118

U. S. Army Corps of Engineers
District Engineer's Office
1776 Niagara Street
Buffalo, N.Y. 14207

Dear Sirs:

We are very interested in your proposed plans for waste water treatment for the Cleveland - Akron area.

Please send the Corp's Brewster Press, a Wastewater Management Newsletter.

We would appreciate it if you could please send all back issues and also to be put on the mailing list.

Thank you,

John C. Harmon
Marlene L. Harmon
John C. Harmon
Marlene L. Harmon

*sent back file
x jcr 11/10/72
JCH*

CC: *[initials]*

Engineering

BUFFALO DISTRICT



THOMAS D. MALONEY
Area code 716
876-5454

BUFFALO, NEW YORK, November 27, 1972: Colonel Robert L. Moore, district engineer, Buffalo District of the Corps of Engineers, and Allen Farkas, Deputy Director for Policy Development of the Ohio Environmental Protection Agency, will sponsor a joint news conference on the Corps' Wastewater Management Study at 10 a.m., Thursday, November 30, in Room R-1 of the Federal Building on East 9th Street in Cleveland. The inclosed brochure outlines the progress of the study to date. A series of public meetings and discussion sessions are planned.

#

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HEALTH PLANNING ASSOCIATION OF NORTHWEST OHIO

225 ALLEN AT W. WAYNE STREET, VAUMEER OH 45887 (419) 823-2157

December 7, 1972

Colonel Robert Moore, District Engineer
Buffalo District Corp of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Moore:

I have been told that the Corp of Engineers is developing a plan to pipe effluent from waste water treatment plants in the Cleveland area to Huron County and Crawford County for storage and irrigation purposes.

We would appreciate having some information and a copy of any plans or studies associated with this proposal.

Thank you for your assistance.

Sincerely,

Ned E. Baker

Ned E. Baker
Assistant Executive Director

NEB/jml

c/c: Carroll Cone
Dr. Gary F. Bennett
Richard Westhofen

2025

and 115

15

Akron Area Chamber of Commerce

ATES:

1064 FALLS CHAMBER OF COMMERCE
CHAMBER OF COMMERCE
SAV CHAMBER OF COMMERCE
WALTON CHAMBER OF COMMERCE

December 11, 1972



O DELAWARE BUILDING
137 South Main Street
AKRON, OHIO 44305

PHONE: 263-9161

Colonel Robert L. Moore,
District Engineer,
Corps of Engineers,
U.S. Army Engineer District,
1776 Niagara Street,
Buffalo, New York #14207

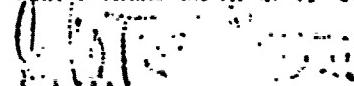
Dear Colonel Moore:

If possible, I would like to have thirty (30) copies of the publication entitled "The Quest for Quality," for distribution to each of our Trustees at the next Board Meeting.

Thank you for any consideration which you may be able to give this request.

Very truly yours,

AKRON AREA CHAMBER OF COMMERCE



G. W. Brittain,
Executive Vice-President

*File in 101571
General file*

SHAKER HEIGHTS SENIOR HIGH SCHOOL
SHAKER HEIGHTS CITY SCHOOL DISTRICT
15911 ALDERSYDE DRIVE
SHAKER HEIGHTS, OHIO 44120
921-1400

WILLIAM H. GREENHAM
PRINCIPAL
EDWARD M. CALDWELL
ALBERT T. SENFT
ASSISTANT PRINCIPALS

ROBERT L. MCNICHES
DEAN, ONAWAY HOUSE
C. A. ZIMMERMAN
DEAN, ALDERSYDE HOUSE

December 11, 1972

Mr. Donald Liddell
Chief, Planning Branch
Buffalo District Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Mr. Liddell,

Miss McGuire is pleased that you can speak to her classes on Monday, December 12 at 9:40 and 10:40. The classes are studying water and will be interested in anything you have to say about the subject, particularly the concern about lake level and dredging.

Shaker High School is reached by turning west on Albers, 1/2 mile. Aldersyde is south of Shaker High Rd. There are parking lots on the north and south sides of the school. If you will come to the main office, I will meet you and show you to the classroom. Thank you.

Sincerely,

Margaret Mitchell
Margaret H. Mitchell (Mrs. . .)
Resource Coordinator

*12/12/72
M. H. Mitchell
163633*

PUBLIC SERVICE ANNOUNCEMENT

Reading time: 30 seconds

Wastewater management in northeastern Ohio will be the subject of a public meeting held by the Buffalo District Corps of Engineers in Cleveland on December Thirteenth. District personnel will discuss alternative plans being developed in conjunction with the State of Ohio and local citizens. The public is invited to attend and to provide input into the selection process. The meeting will be held Wednesday at 7:30 P.M. at the Cleveland Engineering Society, 3100 Chester Avenue.

**BUFFALO
DISTRICT**



THOMAS D. MALONEY
Area code 716
876-5454

BUFFALO, NEW YORK, December 5, 1972: The Buffalo District, Corps of Engineers, will hold three public meetings next week to hear the views of the public on its Wastewater Management Study, for the Cleveland-Akron, Three Rivers area, being done in cooperation with the State of Ohio. The study, nearing completion, considers a regional approach to wastewater management utilizing advanced water based plants and the concept of land treatment.

The meetings will be held as follows:

AKRON
Tuesday, December 12
John S. Knight Auditorium
University of Akron
7:30 p.m.

CLEVELAND
Wednesday, December 13
Cleveland Engineering Society
3100 Chester Avenue
7:30 p.m.

CHICAGO FALLS
Thursday, December 14
Philanthropic Middle School
77 East Washington Street
8:00 p.m.

CORPS OF ENGINEERS PUBLIC MEETING
Cleveland Engineering Society
December 13, 1972

STATEMENT OF NORTHEAST OHIO GROUP OF THE SIERRA CLUB

The 12 plans for treatment of wastewater from the Cleveland-Akron-Three Rivers watershed area, summarized in the Corps of Engineers pamphlet, "A Quest for Quality", are all of extraordinarily large scale, in terms of both scope and cost. We believe that it would be hasty to endorse any of them at this time, as all contain a number of unanswered questions. Careful study and assessment of the technology and methods for treatment are required before an intelligent choice can be made. These studies must include considerations of engineering and economic capabilities, to be sure, but they must also be directed to a sense of the purpose of the project in the context of modern society. If wastewater treatment is to be the solution of a major environmental problem, it must not substitute another in its stead. Neither the environment nor society is well served if wastewater treatment makes excessive demands on energy or mineral resources, or if maximum recycling of all substances contained in the wastes is not included.

All of the plans use one or more methods of tertiary treatment including physical-chemical, advanced biological, and land treatment. We have a number of concerns regarding all of these methods, and I believe that all of the following points need clarification:

PHYSICAL CHEMICAL TREATMENT: Can it deal with all of the pollutants it will be called upon to treat? What are the power requirements? Is there any guarantee that PCT plants can be operated without breakdown and efficiently enough to meet their potential (indeed, considering the quality of the effluent from Cleveland's existing sewerage treatment plants, is there any guarantee that PCT can be operated at all in this area?) Can wastewater composition be monitored precisely enough that treatment can respond rapidly to large volumes of wastewater of rapidly changing composition? What guarantees have we that suitable reagents will always be available in sufficient quantity to meet the requirements of treatment? How much sludge will be produced, and what will be done with it? Can reagents and/or pollutants be recycled?

ADVANCED PHYSICAL TREATMENT: Can APT deal with the wide range of pollutants -- many of them toxic -- that are found in Cleveland's wastewater? Can these plants be operated without operation at breakdown and at sufficient efficiency to assure a clean effluent? Considering the quality of the effluent of current biological secondary treatment plants (such as Cleveland's

Southerly), do we have any reason to believe that treatment from a biological treatment plant can be adequate to meet 1985 Federal specifications? What are the power requirements of AWT? How much sludge will be generated, and what will be done with it?

LAND TREATMENT: Land based treatment appears to offer a method most in harmony with natural processes since it recycles waste material in a beneficial manner. Still, land treatment poses many problems which must be satisfactorily answered before it can be totally accepted. Can it remove the highly mobile ions from wastewater, such as those of nitrogen, which are not readily adsorbed onto soil particles? What is the fate of heavy metals, both as they pass through the soil and as they are removed by plants? Will they be passed through the food chain and become incorporated in human food (this is a form of recycling we do not want)? What kinds of monitoring will be done to insure that potentially toxic materials do not build up in the soil and that they are not flushed back into surface waters through the drain tiles? How efficient are the Chili and the Cardington-Bonnington soils for receiving and treating Cleveland-type wastewater? What kinds of land-acquisition policies will have to be followed; and is it reasonable to expect that 134,000 acres of suitable treatment area can be obtained? What technological problems are involved in building a sufficiently large tunnel to carry effluent some 70 miles to the treatment area? How much power is required to transport water that distance and lift it some 350 feet?

These questions require answers. As planning and construction proceed, still more questions will arise. But it is necessary to explore these problems we can anticipate as thoroughly as possible in order to maintain an open mind in reviewing alternatives. Flexibility is the essence of ecologically sound thinking, and commitment at this time to any single plan can only hamper the adoption of the best method or combination of methods for wastewater treatment in this area.

In any case, all costs of all plans must be documented in terms of (1) dollars, (2) dislocation of people and land use patterns, (3) resources, both land and chemical, (4) power, including both fuels and electricity, and (5) potential for recycling and other economic and environmental benefits. It is obvious that the social context of this project cannot be divorced from the consideration of these different possibilities. No matter how sound any alternative may be with respect to engineering, economic, or environmental considerations, it can not be feasible in a hostile social environment.

At the very least, we can't let no alternative be chosen at this time. All options should be kept open as long as possible while investigating the social implications of the different options. At the very least, these studies must include:

- 1) Small-scale demonstrations, to test the competency of the Chillicothe soils to treat wastewater from communities of the upper Cuyahoga watershed, and also to test the competency of the Cardington-Billington soils to treat wastewater from one of the cities of the Norwalk-Shelby-Bucyrus-Tiffin area.
- 2) The performance of the physical-chemical plant now under construction at Cleveland Westerly must be monitored closely enough to allow intelligent extrapolation to broader scale treatment by this method. It must also be determined if the City of Cleveland or any other agency in this area is capable of operating a plant of this complexity.
- 3) The performance of an advanced biological plant treating wastewater from an industrial city such as Cleveland must also be monitored closely to ascertain its applicability to use in this area.

When these tests and observations have been made and adequate data are available, it should be possible to make an intelligent decision of a treatment plan.

W. B. Clapham, Jr.
Assistant Professor of Geology
Case Western Reserve University

Way Young
Graduate Student in Geology
Case Western Reserve University

Irene Norn
Industrial Research Chemist

Edward J. Fritz P.E.

IZAAK WALTON LEAGUE OF AMERICA

DEFENDER OF THE WOODS, WATERS AND WILDLIFE

WESTERN RESERVE CHAPTER, INC.

2794 BEL GRAVE ROAD CLEVELAND, OHIO 44124

Cleveland Heights, Ohio,

December 13, 1972.

My name is Soba H. Estill, I reside at
3577 Cummings Road, Cleveland Heights, Ohio,

... the U. S. Army Corps of Engineers
Hearing on Waste Water Management, held at
Cleveland Engineering Society Building,
3100 Chester Ave., Cleveland, Ohio.

This is the Statement of
The Western Reserve Chapter
of The Izaak Walton League
of America, Incorporated.

Gentlemen:

We have been privileged to preview the statement being presented
here by Mrs. James H. Angel, on behalf of Citizens for Land and Water Use.

Mrs. Angel is a member of our Western Reserve Chapter of The Izaak
Walton League of America.

As our thoughts and ideas regarding Waste Water Management fully
coincide with those being expressed here by Mrs. Angel, we hereby endorse her
statement as likewise representing the views of The Izaak Walton League.

I thank you,

Western Reserve Chapter, I. W. L. A.

By: Soba H. Estill
Soba H. ESTILL,

Conservation Chairman,
3577 Cummings Road,
Cleveland Heights, Ohio 44124

P. S. Please consider the attached clipping as part of my statement.

Dec. 13, 1972, p. 163

CITIZENS FOR LAND AND WATER USE

Water Is Not Free To Modern Man



Dilution Is No Longer The Solution To Pollution.

"Water is Life"

Public Hearing on the Alternatives for managing Wastewater in the
Three Rivers Watershed Area, U. S. Corps of Engineers
Engineering & Scientific Center, Cleveland, Ohio, Lee shore 13, 1972.

I am Mrs. James P. Angel, Chairman of Citizens for Land and Water Use, Cleveland Metropolitan Area.

The study made by the United States Army Corps of Engineers, has indicated the need for regional waste water management. We have by regional, the Corps means WATERSHED.

Since December 1965 we have had the structural beginning of a regional agency. It is the Three Rivers Watershed District. We feel the time has now come to broaden its powers to include management as well as planning. We need a basin organization such as this that is close enough to the people to understand the problems, and large enough to operate objectively for the interest of the whole area.

Not seeing the facts of a problem in a human trait. As citizens of a representative form of government we have indulged this human trait in our government affairs to the detriment of our society.

In many cases formulating new plans for pollution control at higher levels of government is an expenditure that complicates the solution to the problem.

As members of the Citizen's Advisory Council to the REWWD plan we mailed, to about a thousand political entities, the following message:

MUNICIPALITIES SHOULD MAINTAIN HIGHER WATER QUALITY STANDARDS THAN THOSE SET BY THE STATE OF OHIO.

PROJECT ENGINEERS MUST BE ABLE TO DEPEND ON EACH COMMUNITY TO ACHIEVE HIGH STANDARDS.

WE CAN REDUCE OUR POLLUTION IMMEDIATELY BY MAKING PRESENT POLLUTION CONTROL INSTALLATIONS WORK.

LOCAL GOVERNMENTS AT THE SCENE MUST ACT TO CORRECT DEFICIENCIES IN THE INSTALLATION AND OPERATION OF ALL FACILITIES.

The truth is that we have not ever provided a favorable situation for a waste water treatment plant to operate consistently according to engineer's design.

Some municipalities are paying for advanced waste treatment technology while the operation of some of their other departments directly hinder the system.

Our cities must be programmed to operate all departments to insure a successful waste treatment operation.

Our permissive society does not supply the number of competent people needed to manufacture----install-----operate-----and maintain a sewer system. Anything that is done right is the exception, not the rule.

All people working for a municipality should be educated to understand where their jobs fit into the total function.

We must address ourselves to the political pollution that precludes the possibility of a good plant operation. TRAINING MUST BE MANDATORY FOR ALL EMPLOYEES. Waste water treatment plants never could absorb the nice people who need employment but are untrainable.

Too many old mistakes are perpetuated during new construction when we might better. All new construction should be charged the actual cost of their burden to the utility.

Pollution control funds are available at all levels of government thanks to the persistent demands of the citizen.

We believe there are sufficient engineering plans on the shelf that if implemented we would have clean water today.

The citizen has provided the money and has strong views on how it should be spent. For example, we sent the following letter to our Congressman: July 5, 1972:

Dear Congressman Minshall:

It is wrong to discharge the effluent from Waste Water Treatment Plants farther out into Lake Erie to enhance shoreline recreation.

Our environmental laws are intended to lessen the amount of sewage that goes into the lake. As it is now, the Federal and State governments are in agreement that extending discharge pipes farther into the lake is the solution to toxic shore-line pollution. We protest this action!

Municipalities presently receiving Federal funds for STP expansion are not correcting broken lines and wrong connections throughout the systems except on an emergency basis.

Very few municipalities have had programs of proper installation and maintenance.

It is the accumulated results of this negligence that has negated the improvements we thought we paid for.

We are stymied by home rule; plus the fact that local officials too often do not tell the truth to State inspectors.

Citizens become apathetic when they are ignored by local public officials when they protest these bad conditions.

As a last resort we are appealing to you that, when Federal funds are granted to a community for waste water treatment improvement, there be a stipulation that these communities prove they are properly maintaining and installing their entire sewer system.

Experience has shown to us that we cannot take any man's word on these matters.

A more rigid inspection and approval will lower the cost and raise the quality of pollution control.

The taxpayer has a right to expect good performance for money spent. With poor performance no one will never have to discharge sewage treatment plant effluent farther into Lake Erie.

Respectfully,
Mrs. Jeanne R. Engel, Chairman
Mr. Richard L. Wilcox, Co-Chairman

16

We toured the Penn State University irrigation project. We are awaiting the results of the Muskegon, Michigan land spray project.

For years our organization has recommended that properly treated organic wastes should be used to replenish the land. It is well known that much of the land in this area is organically depleted. There is no other available source, except STP sludge, sufficient to supply this need.

The City of Cleveland has recently contracted with private industry to haul treated STP sludge to stripmine land in Alliance, Ohio. We urge total cooperation in this positive action by removing the phosphates at the STP to enhance the sludge, and the phasing out of incinerators. This is a unique opportunity to solve two problems by putting them together. Poor soil and organic sludge. This full scale practice can reverse the eutrophication of Lake Erie.

We are proud that the City of Cleveland and an industrialist are already operating in line with one of the sludge proposals of the Army Corps of Engineers. We want all municipalities in the Three Rivers Watershed District to follow suit.

Few of us here tonight will be alive in 1990, the design year of the Corps. Therefore we are ~~100%~~ ~~100% / 100% / 100%~~ obligated to help those who are executing good plans now.

We thank you for this opportunity to present our views which we feel serve the public welfare above all other considerations.

Res. James H. Angel, Chairman
Res. Edmund F. Sarcina, Co-chairman

"GROWING
WITH
WILLARD"

THE WILLARD TIMES

BOX 345

WILLARD, OHIO 44890

MARK N. BROUWER
EDITOR AND PUBLISHER

Dec. 13, 1972

Mr. Thomas D. Maloney
Corps of Engineers
1776 Niagara Street
Buffalo N. Y. 14207

Dear Mr. Maloney:

This is simply to confirm that the Willard Rotary Club will be looking for Don Liddell as the speaker at the meeting on Monday, Dec. 18, at 6 p.m. in the Brunswick Grill.

The Grill is located at 13 Myrtle Ave. and is found easily across the street from City Hall and one-half block south.

Since I assume that the Corps wishes such programs to get as much exposure as possible, the club has invited a number of guests, including city and township officials, to hear the story.

Sincerely,

Mark N. Brouwer

Mark N. Brouwer
Rotary Club Program Chairman

2731 CARANOR Drive
KENT, OHIO 44240

December 13, 1972

Dear Col. Moore,

Thank you so much for the Corps efforts to restore the Cuyahoga River. I would like to add a few personal comments.

1. A few large treatment plants mean sending most of the Cuyahoga River downstream in a pipe. This presents both aesthetic and recreational problems but more important, in dry years the effect would be to lower water tables and the river would consist solely of the effluent from treatment plants. Recharge of groundwater must be considered. It seems to me that a pipeline from Lake Erie to the Cuyahoga River would solve a lot of problems. The NJO water levelorman plan makes no provision for this or for low flow augmentation of the River between Rockwell dam and the Kent wastewater treatment plant during the long summer months when no water comes over the dam.

2. I disagree with the last statement under subsection 7. Both inadequate sewage treatment and erosion are problems here.

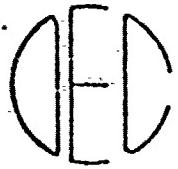
3. Careful attention to siting of any facilities would be great public relations.

4. None emphasis on re-use of water. We can't throw away \$1 per gallon good water just because it came out of a treatment facility. The price

tags are so high that a number of people cannot contribute their share and I'm not sure that the majority of people will accept the reduction in standard of living needed to pay for cleanups. All advances need to be explored to recover resources, not only to reduce costs but to prevent depletion of nonrenewable resources. In the environment in 2020 people may have no choice but to pay the price so, as you know, the time to plan is now.

Sincerely yours,

Edith Chase



OHIO ENVIRONMENTAL COUNCIL

248 Old W. Wilson Bridge Road
Worthington, Ohio 43085
Phone: 614-846-2790

PUBLIC INFORMATION - CITIZEN INPUT FORUM

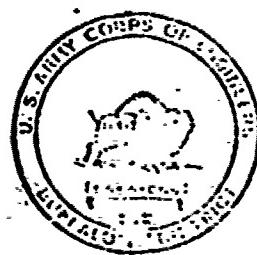
COLONEL ROBERT L. MOORE, DISTRICT ENGINEER, BUFFALO

15 DECEMBER 1972
10:00 AM

IMPERIAL HOUSE NORTH
I -71 and Morse Road
Columbus, Ohio

U.S. ARMY CORPS OF ENGINEERS ALTERNATIVES FOR MANAGING WASTE WATER

FOR CLEVELAND - AKRON
METROPOLITAN AND
THREE RIVERS
WATERSHED AREAS



170

9 Hom. on Avenue
Norwalk, Ohio 44857

January 4, 1973

First we get Riley's liquid waste disposal, now this.
What will be allowed next? We will be better off living in
the Metropolitan Area.

Slowly we are losing all our rights. The burning barn
will soon cause our dumps to fill faster destroying more
land. I do not believe in general burning but household
waste paper should be allowed. The escaping gases and smoke
are not as serious as the using up of more land. We continue-
nally limit or destroy the useage of more land. Now it
appears Huron County will be the next area to be destroyed.

Col. Robert E. Moore
Corps Chief
Buffalo District of the Army Corps of Engineers
Buffalo, New York

My husband and I are opposed to any plan to transport
wastewater from the Cleveland-Akron area to Huron County.

Dear Col. Moore,

On December 26, 1972, the Norwalk Reflector carried the
article "Manure in America's Barnyards No Laughing Matter"
by Louis Cassells (UPI). To quote Mr. Cassells "America's
most acute waste disposal problem is rural and agricultural.
It's how to get rid of 'animal wastes'".

Yours truly,

Jane E. Adelman
Jane E. Adelman

Mr. & Mrs. James E. (Jane) Adelman

1517-04 (Clev. Thru. up. Area W.C. to go)

"And the farmers who raise crops aren't much interested
in buying manure as fertilizer. They've learned they can
use chemical fertilizers more easily and at lower cost."

"With no economic alternative available, many livestock
and poultry growers are simply piling up ever-growing
mountains of manure."

"...ammonia and other gases escaping from these piles
of animal waste and chemical pollutants running off from
them are causing widespread contamination of air and water."

So here we are and you want to send us more waste.

We will be having our own problems before long and we
certainly are not going to get assistance from the Metro-
politan area. I realize the pollution problems are serious
but why pollute the rural area as the cities are today.

I think the millions of dollars that would be spent on
this project should be used to improve the problem at its
origin rather than extending it.

If we allow this project to take place what next?

EUREKA

John

171

HURON COUNTY
REGIONAL PLANNING COMMISSION



TELEPHONE 662-5631 150 JEFFERSON STREET NORWALK, OHIO 44857

Col. Robt. Moore
U. S. Army Corp. of Engineers
Buffalo District
1776 Niagara Street
Buffalo, N. Y. 14207

January 5, 1973

Re: Three Rivers Wastewater Management Study

Dear Col. Moore:

After due consideration, the Executive Committee of the Huron County Regional Planning Commission, hereby goes on record as strongly opposed to the Plans Nos. 2, 4, 6, 8, 9 and 12 of the Three Rivers Watershed Survey Scope Study.

These plans as prepared by the U. S. Army Corp. of Engineers, Buffalo District, for the Cleveland-Akron metropolitan areas, envision the use of land areas within Huron, Seneca and Crawford counties, ranging from 94,000 to 237,000 acres, or at the top range, the equivalent of fourteen and three-quarters full townships.

In view of the tremendous unknown social and economic impact any project of this magnitude would have upon the residents of the three county area, as well as the untested agricultural irrigation theories, as related to the existing clay soil types of this territory, the Planning Commission strongly recommends dropping the listed land treatment plans from the recommendations to be presented to the officials of the State of Ohio.

However, this committee does commend the idea of the local recycling of wastewater through the soils for the benefit of ecology and environment, as well as economic gain. Certainly extensive and exhaustive tests with pilot projects over extended periods of time should be established and monitored.

Very truly yours,

C. B. Rye

C. B. Rye
Director

CBR/jn

CC: C. B. Rye, Director
Ohio Department of Natural Resources - Columbus, Ohio 43215

Dr. M. L. Miller, Director, Ohio D.P.A.

R.D. # 2
Norwalk, Ohio
1-10-73

Col. Robert Moore
United States Army Corps of Engineers
Buffalo, New York

Dear Sir,

I would like to express my opposition to the proposed idea of dumping the waste material from the vicinity of Cleveland, Ohio into parts of Huron, Seneca, and Crawford Counties. I don't think these areas need to be used as a dumping ground for other communities.

Would you be willing to have your neighbors use your property for a dumping ground for their waste materials? I am certain you would not be in favor of such a practice by your neighbors toward your property.

In closing I hope you will find some way to keep Cleveland's waste materials in the county where it is produced.

Sincerely yours,

Elmer J. Horning

ELMER J. HORNING
CIVIL ENGINEER
1-10-73

New Washington C.
44854
Jan 11, 1973

John Liddell

Corps of Engineers

1776 Niagara St.

Buffalo, N.Y.

Dear Sir:-

Will you please send me any additional information regarding the Cuyahoga River Restoration Study and the Alternatives for Managing wastewater in the Cleveland-Akron Metropolitan and Three Rivers Watershed Areas. Especially a map showing exactly where they are planning to locate the storage basins.

From what information we have been able to gather our farming operation is within this area, so we are very much concerned for our future livelihood and the interest of our whole farming community. Sincerely,

Mr. John L. Liddell
Class I.
Filed by [initials]

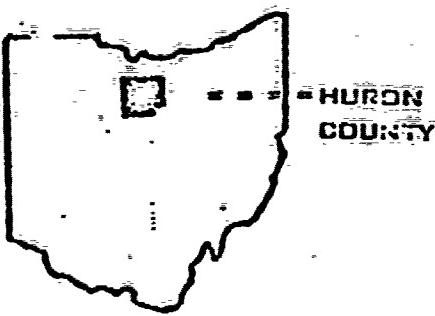
Mr. Joseph Steele
New Washington C. Inc.

Jeff Farmer
Ed Robertson
Alice Smith

BOARD OF
COUNTY COMMISSIONERS

Single Monday and Thursday

TELEPHONE 663-1271



NORWALK, OHIO

12 January 1973

Robert L. Moore-
Colonel, Corps of Engineers
District Engineer
U. S. Army Engineer District
1776 Niagara Street
Buffalo, New York 14207

THREE RIVERS
WATERSHED SURVEY STUDY

Dear Colonel Moore:

First- we want to again thank you and other members of your staff for your willingness to come again to Norwalk and explain your proposed project. You have a big problem!

Our file is growing- with letters of opposition from local residents- and we want to add our resolution for your data. We know that you understand our feelings as we have voiced them on the various meetings.

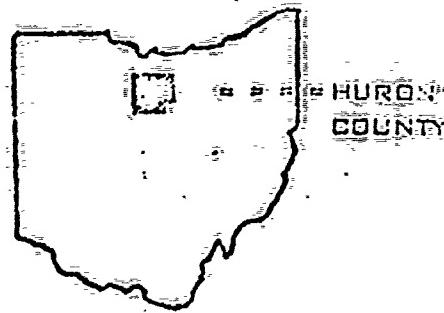
Very truly yours,

Richard S. Robertson
Chairman for the Board
(Signed by County Administrator Letter authorized at
regular meeting, 11 January 1973)

enc (1) *[Signature]*

John Werner
Donald Robertson
Barney Smith

BOARD OF
COUNTY COMMISSIONERS



Meeting: Monday and Tuesday

TELEPHONE 663-4271

NORWALK, OHIO

IN THE MATTER OF RESOLUTION-THREE RIVERS WATERSHED SURVEY SCOPE STUDY

Mr. Robertson moved the adoption of the following resolution:

WHEREAS, it is the unanimous decision of the members of the present Board of Huron County Commissioners, Norwalk, Ohio, that the response from the residents of HURON COUNTY, both verbally and in written form, now on file with the said Board of Huron County Commissioners- and- these together with the conclusion arrived at--after much careful study and consultation with people "in-the-know"- that

NOW THEREFORE, BE IT RESOLVED, that we certify a copy of this resolution voicing our opposition to the proposed plan of the Corp. of Engineers to transport sewage and other wastewater from the CLEVELAND/AKRON/THREE RIVERS BASIN, OHIO to land areas within HURON COUNTY- and

FURTHER BE IT RESOLVED, that copies be sent to the U. S. Army Corps of Engineers, Buffalo District, 1776 Niagara Street, Buffalo, New York, 14207 and to the Director, Ohio Department of Natural Resources, Ohio Departments Building, Columbus, Ohio, and also made available to all interested people and news media.

Mr. Werner seconded the adoption of the above resolution and upon roll call, the following vote resulted. Mr. Smith, aye; Mr. Werner, aye; Mr. Robertson, aye.

CERTIFICATION

I, Evangelene Miller, Clerk of the Board of Huron County Commissioners do hereby certify that the above is a true and correct copy of the resolution as passed by the above Board on 11 JANUARY 1973 and is recorded in the Commissioners Journal Vol. 45, page 17.

Evangelene Miller, Clerk and County Administrator

VILLAGE OF NEW WASHINGTON

New Washington, Ohio 44854

January 16, 1973

Department of the Army
Buffalo District, Corps. of Engineers
1776 Main Street
Buffalo, New York 14207

Attention: Robert L. Moore
Colonel, Corps of Engineers
District Engineer

Dear Colonel Moore:

Please be informed that at the last Village Council meeting of New Washington, Ohio, that they went on record opposing your proposal in which Sewage and wastewater originating from the Cleveland-Akron Metropolitan and three Rivers Incorporated Area being treated and disposed by land treatment in the proposed Northern Crawford County Area.

Sincerely yours,

Paul E. Zimmerman
Paul E. Zimmerman
Clerk of Council

cc: Karl Erol,
Senator Gene Slagle

Parma Public Schools
FORREST ELEMENTARY SCHOOL
11800 HUFFMAN ROAD

PARMA, OHIO 44130
January 16, 1973

Barry Pritchard
Corps of Engineers, Cleveland
Resident Office
Foot of Ninth Street
Cleveland, Ohio 44114

Dear Sir:

Please send one copy of your pamphlet, "The Quest For Quality".

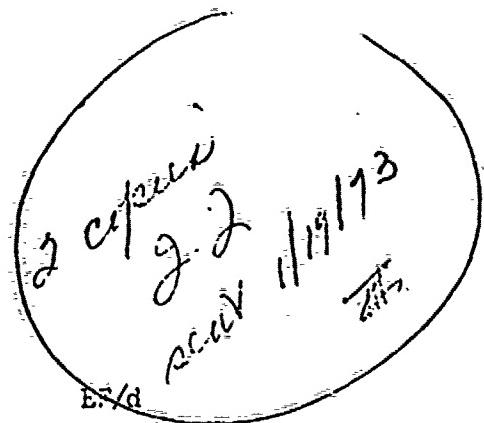
We understand that this material is free of cost and may be circulated from our Media Center.

Thank you for your generosity.

E. Febel

E. Febel

Media Specialist



COPYS

Med Bld
lby

178

A RESOLUTION OPPOSING THE DUMPING OF SANITARY SEWERAGE AND
OTHER DELICIOUS MATERIAL IN THE HORNOR RIVER VALLEY

Whereas the United States Army Engineers have proposed that liquid sewerage and other waste material be pumped from the Cuyahoga Watershed into the Huron River Watershed;

Whereas this proposal, if carried out, would limit the uses to which agricultural land could be put, thereby increasing the prices of agricultural products for human consumption.

Whereas this dumping of sewerage could pollute the surface streams of the Village of North Fairfield and the surrounding area, diminishing their value as water supplies for human and recreational use.

Be it resolved by the Council of the Village of North Fairfield that this council requests that all work on this project be discontinued immediately.

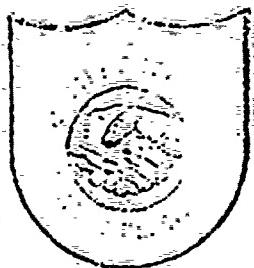
Charles R. Jester
Mayor, North Fairfield

John Drayton

Attest: Charles R. Jester
WITNESS: D. C. 26510
CD

Feb 19, 1973

F109



MAHONING VALLEY HEALTH PLANNING ASSOCIATION
15 COLONIAL DRIVE • YOUNGSTOWN, OHIO 44505
PHONES: YOUNGSTOWN 759-2794 • WARREN 395-1291

January 17, 1973

Mr. Barry Pritchard
Corps of Engineers
Cleveland Resident Office
Foot of Ninth Street
Cleveland, Ohio 44114

Dear Mr. Pritchard:

I thought the concepts and alternatives in the study report booklet, "The Quest for Quality--An Overview of the Wastewater Management Program for the Cleveland/Akron/ Three Rivers Basin, Ohio" were excellent and I feel some them could be applicable in the Mahoning River Basin.

If available, would you please send : e twenty copies of this study report booklet so I could give it to some key people in our agency and in our area of Columbiana, Mahoning and Trumbull Counties.

Thank you for any assistance you can give regarding my request.

Sincerely,

William J. McDonough
William J. McDonough
Planning Associate
Environmental Health

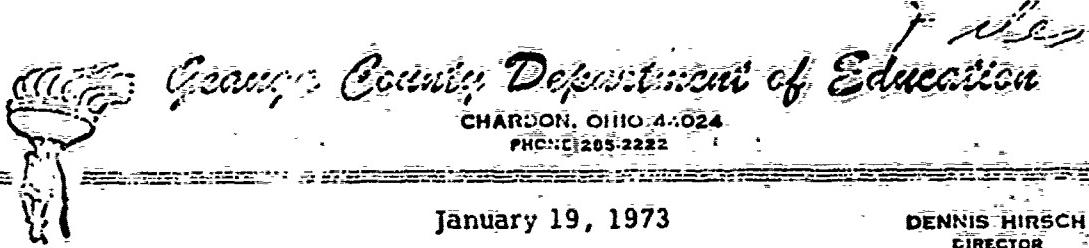
WJMK

cc:

Mr. William J. Harnisch, President, MVHPA
Mr. Bernard E. Hull, Ohio CHP

Jan. 17, 1973

193



January 19, 1973

DENNIS HIRSCH
DIRECTOR
JUNIOR HIGH EDUCATION

Barry Pritchard
Corps of Engineers
Cleveland Resident Office
Foot of Ninth Street
Cleveland, Ohio 44114

Dear Sir:

We recently received a copy of The Quest for Quality and circulated it among the science and social studies teachers of the Geauga County Schools. Its appropriateness in both subject matter, environmental protection, and physical location, northeastern Ohio, caught the eye of several of our secondary teachers. Our problem now is to find some way of incorporating the useful information contained in the publication into our school curriculum. The most direct method would be to use the publication as a classroom reference. The only problem would be to obtain copies in sufficient quantity to make their use feasible. If your supply of this publication is large enough to furnish us with 75 to 100 copies, or any portion thereof, we would be greatly appreciative. You can be assured any copies forwarded will be put to immediate use in our study of our local environment.

Your cooperation in fulfilling this request is greatly appreciated.

Sincerely,

GEAUGA COUNTY SCHOOLS

Dennis W. Hirsch
Dennis W. Hirsch
Director
Junior High School Education

DW11/dgn

Rec'd 1/17/73
V.H./J.E.

Seneca County Department of Health D

21X Court Street . Telephone: 447-3691

Post Office Box M

TIFFIN, OHIO 44883

January 24, 1973

Mr. James J. Bartrop
Seneca Co. Regional Planning Commission
244 S. Washington St.
Tiffin, Ohio 44883

Re: Three Rivers Liquid Disposal

Dear Jerry:

Although comments are evidently not required on the above mentioned project, I feel I would like to make the following comments anyway:

- #1. Although I am neither for nor against this project, I am in full agreement that a pilot project should first be made, as it has been rumored that the State farms are to be sold. If they are not going to be sold, would they be available for this project?
- #2. A few years ago this same area was approached for the disposal of solid waste for the larger metropolitan areas and now they are talking liquid waste from the same areas. What next?
- #3. How much actual field study in this area has been done concerning porosity of the soil, the ability of constructing a lagoon that will function properly, or has all the work been done in an office at a desk?
- #4. How are they going to control secondary treatment during the time of heavy rainfall, or are they contemplating putting in a separate sewage system before the above mentioned project takes place, since a statement was made by the Corps of Engineers that only treated effluent will be used at this phase.
- #5. Is a soil study contemplated with the proposed pilot project to see what changes will be made in the soil structure? Will they be able to raise the same crops, or change to a different type of farming than what they are accustomed to?
- #6. Will the Corps of Engineers actually turn this over now to the State Environmental Protection Agency for implementation or will the Corps of Engineers be able to implement this same project under a different grant?
- #7. With the property owners that are against such a project, can it still be implemented by eminent domain?
- #8. Do the metropolitan areas in the three rivers basin at the present time have secondary treatment. If they do, would not approximately the same effect on the rivers in question be achieved if they would pick up all effluent lines that are now dumping directly into the rivers with a main break line then tie to the sewage disposal plant and install a required tertiary treatment?

The above are questions I would raise concerning this project. Possibly they could have been answered in some other meetings other than our last Regional Planning Meeting.

I would appreciate it if you could convey these thoughts to the Colonel of the Corps of Engineers and perhaps he could refer the answers to me at some later date.

Yours very truly,

SENECA COUNTY GENERAL HEALTH DISTRICT

Robert A. Becker, R.S.

Robert A. Becker, R.S.
Senior Environmentalist

RAB/ae

February 1, 1973

State of Ohio Environmental
Protection Agency
P.O. Box 1049
Columbus, Ohio 43216

Dear Sir:

In order to clean up our streams and lakes and at the same time refrain from further destruction of our environment, I feel there has not been any or ~~any~~ sufficient study given to following the way nature is set up for handling waste, human or animal.

We all agree that the land is our best filter for pure water, but disagreement comes when our area of good agricultural land is turned into a swamp by being saturated with effluent as is being proposed for parts of Crawford, Huron, and Seneca Counties in Ohio - with waste from the Cleveland-Akron metropolitan area.

I can see no reason why all human waste, as well as the concentrated animal feeding industry waste cannot be manufactured into a good organic type fertilizer that can be used beneficially by all of agriculture, thereby lessening and maybe eliminating the need for the chemical nitrogen, etc. that also pollute our waterways.

I am a full-time grain farmer that loves our beautiful nature very much. The paper writers whom our colleges have turned out, who sit behind desks and may not agree with my next statement. The nitrogen we produce for our land by growing legumes, the nitrogen that is produced and is lodged in the nodules on our soybean roots are on our land for our use in the spring. This is organic. The chemical nitrogen that the book farmers say we can spread after the ground reaches a temperature of 55 degrees or less still runs away.

If we intend to protect and clean up our environment, LET'S DO IT! Certainly by dehydration, evaporation or some other method, the problem of waste disposal could be solved, not forestalled as the proposed project will only do.

It may be necessary to go back into the bathrooms of the American homes for a little less water usage, but so what!

Very truly yours,
Eugene Rietzlin
Eugene Rietzlin
Rt. #1
Crestline, Ohio 44627

cc: Ohio Dept. of Natural Resources
Col. Robert L. Moore
Environmental Protection Agency - 450 S. Michigan Ave.
Gov. John J. Gilligan
State Senator - State Representative
Senators Taft and Saxon
Senator
Congressman Ashbrook *REC-COM*
Checked by *[Signature]*

March 10, 1973
Crestline, Ohio

H. Robert L. Moore,

The following resolution was
unanimously passed in a recent
meeting of the Crawford County
Pomona Grange

Whereas the proposed project of bringing sewage
from Cleveland to Crawford County, to use part of
Crawford County as a leach bed, would remove untold
numbers of acres from the tax lists and increase the
tax burden on those remaining, pollute underground
waters as well as the air, and endanger the health of
local residents, thus becoming a public nuisance;
therefore be it resolved that the Pomona Grange of
Crawford County oppose the project for Crawford County.

Chairman of the Legislative
Committee of Crawford Co.
Pomona Grange

William S. Bauer

B-1-280

Realtor

Crestline, Ohio

3/10/73

b6

V.J.M.

OHIO FARM BUREAU FEDERATION, INC.

245 North High Street, Columbus, Ohio 43216 • Area Code 614 • 221-1141



March 19, 1973

Mr. Donald Lidell, Chief of Planning
U. S. Army Corps of Engineers
Buffalo Branch
1776 Niagara Street
Buffalo, New York 14207

Dear Mr. Lidell:

The following are the names and addresses of persons attending the March 12th meeting, who were not on your list:

Evan Hertz, Route 5, Tiffin, Ohio 44883 (P.A. Chairman - Seneca)
Robert Jones, Jr., Route 3, Tiffin, Ohio 44883 (Pres. - Seneca)
Ken Yoakum, Route 1, Kansas, Ohio 44841 (Org. Dir. - Seneca)

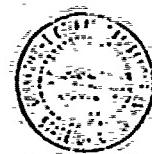
Sincerely,

Martha

Martha Bristol, Sec'y. to
Curt Dunham, Director
Local Affairs

File copy
3-19-73

OHIO
DEPARTMENT OF NATURAL RESOURCES



WILLIAM E. NYE
DIRECTOR

STATE OF OHIO

DEPARTMENT OF NATURAL RESOURCES

OHIO DEPARTMENTS BUILDING
COLUMBUS 43215

March 19, 1973

Mr. Don Liddell
U.S. Army Corps of Engineers
1716 Niagara Street
Buffalo, New York 14207

Dear Don:

Enclosed is a summary of written response to the Department of Natural Resources as a follow up to the discussion with Bob Nicaise. I hope that summary will be helpful.

Sincerely,

Ralph Nicolosi
Water Planning

RTN:cmr

Summary of written responses received by Ohio Department of Natural Resources: Three Rivers Wastewater Management Study.

CORRESPONDENT	PARTICIPANT'S VIEW
13/73 Mrs. Robert Karl R. R. #1 Plymouth, Ohio 44865	Opposes the proposal from a farmer's standpoint in that the land and water would be contaminated.
27/73 Mrs. Robt. Forster, Route 1 Tiro, Ohio 44887	Opposes the proposal alleging that the wastewater plan will inhibit the property value, economic potential, and architect value of the area in question.
3/73 Mr. Robert Forester R. R. #1 Tiro, Ohio 44887	Opposes the proposal in so much that it will prohibit the use of productive farm lands, and part of the lagoon will be on his property. Mr. Forester also expresses opposition to the plan from the Buckeye Central School Board of which he is a member.
23/73 Mrs. Esther Wise Route 1 Attica, Ohio 44807	Opposes the proposal from a farmer's viewpoint in that the land, water, and crops would be jeopardized.
2/73 Mr. Dennis Karl R. R. #2, Box 29 Tiro, Ohio 44887	Opposes the project from a farmer's viewpoint asserting that the alleged advantages will not equal the inherent pitfalls in the project.
27/73 Mr. & Mrs. Lorin Kraft R. R. #1 New Washington, Ohio 44854	Express opposition to the proposed project foreseeing a destruction of their farmland.
21/73 Ms. Josephine Karl R. R. #1 Tiro, Ohio 44887	Opposes proposal alleging that the wastewater plan will desecrate productive land. Offers alternative plan to use sludge as wastewater in stripmining areas.
28/73 Mrs. Gertrude Young R. R. #1 Tiro, Ohio 44887	Opposes project on the basis that raw water would be unusable, the lagoons pose a health problem, and many people would be rendered homeless.
19/73 Mr. & Mrs. Arthur Burger Rt. #1, Box New Washington, Ohio	Oppose the project from a farmer's point of view that the land will be rendered useless.
21/73 Mr. Edward Karl Rt. #1, Box 35 Tiro, Ohio 44887	Opposes the plan not only from a farmer's viewpoint of land spoilage, but also fails to account the economic impact of adding

- 1/73 Mr. Eugene Rietzschke
Rt. #1
Crestline, Ohio 44827

Suggests that the proposed plan can only force all pollution; he sees definite alternatives as a more viable answer. Expresses concern that the effluent from the Cleveland area will saturate the farmlands to the point of swampland.
- 7/73 Mr. & Mrs. Roy Steiger
Rt. 5 , Box 5088
Bucyrus, Ohio 44820

Opposed to sewage disposal methods proposed by Corps.
- 4/73 Mr. & Mrs Adleman
9 Homewood Ave.
Norwalk, Ohio 44857

Express opposition to the project in that they feel that they have sufficient pollution problems without additional wastes.
- 9/73 Celeryville Conservancy Dist.

Board of County Comm.
Huron, Ohio, Seneca Ohio
City Council of Willard
Board of Trustees for:
Vernon Township, Crawford Co.
Liberty Township, " "
Auborn Township, " "
Cranberry Township " "
Chatfield Township " "
Venice Township, Seneca Co.
New Haven Township, Huron Co.
Richmond Township, " "
Norwich Township " "

Express formal opposition to the sewage transport plan.
- 8/73 Mrs Helen Wolfe
R. D. #2
Norwalk, Ohio
Sec to Atomic Mixers Farm
Bureau Council

Opposed to plan in that the dangers are not known.
- 12/73 A. F. Herter, Chairman
Board of County Comm.
Huron County
Norwalk, Ohio

Opposed to proposed plan of the Corps Engineers to transport sewage and other wastewater from the Cleveland/Akron/Three Rivers Basin to the area within Huron County

PAGE 2

- 2/1/73 Mrs I. J. Vohres
Tiro, Ohio 44887
S/JL
Opposes the project coming through the area in which she lives.
- Opposes the project and cites the poss. problem of effluent being sprayed on land.
- 2/1/73 Mrs. Eldon Ackerman
127 N. Center Street
New Washington, Ohio 44854
Opposes the project arguing that the wastewater plant would prohibit the use of arable farm lands; and if the lands can be used, the crops would be inferior. also expressed opposition to the local people having to relocate.
- 2/1/73 Mr. Franklin Eckstein,
Dush & Eckstein Attorneys
at Law
The Willard United Bank Bldg.
Willard, Ohio 44890
Representing Holiday Lakes Property Owners Assoc., Mr. Eckstein expresses opposition to pollution of the lakes by surface waters in that the property will depreciate in value. Also representing the village of Monroeville, Ohio, Mr. Eckstein notes that the Huron river is the sole source of drinking water for the village; and the partially treated water could drain into the Huron basin resulting in contaminated drinking water.
- 2/2/73 Willard City Council
Willard, Ohio 44890
cc: I. Gardner, D. Straka,
K. Jones, J. Dunn, G. Siegmeyer
Oppose project arguing that the sewage dumpsite would diminish the surrounding water supplies value for human & recreational use.
- 2/10/73 Lowell D. Kreager
Legislative Agent
Greenwich Grange No. 25 76
Oppose proposal for the following reasons: soil cannot absorb excess water, jeopardizes health, soil spoilage, economic strain on families who would have to relocate, the participants endorse a parochial method of solving environmental problems.
- 2/2/73 Mr. Vincent K. r
R. R. #1, Box 33
Tiro, Ohio 44887
Opposes project as a farmer arguing the excess of surface water will contaminate the land. He also expresses concern for the economic & aesthetic value of the area.
- 2/2/73 Mr. L. L. A. H. Deelman
Cor. Spring & Liberty, Bucyrus, Ohio 44820
Expresses opposition to the plan concerning neglect to properly own up, is harassed, and the impracticality of the need such a project.

Ohio Extension Service



21. 114th Read.
02. 1973, Ohio
42103

AGRICULTURE/HOME ECONOMICS/NATURAL RESOURCES

January 24, 1973

Mr. Donald M. Liddell
Chief, Planning Branch
U.S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Mr. Liddell:

Dr. Teater has asked me to provide you with the details of the meeting to be held in the Crawford County Courthouse, Bucyrus, from 9:30 A.M.-3:00 P.M. on February 6, 1973.

The purpose of the meeting is to discuss wastewater treatment and disposal and to attempt to answer questions that County Extension Agents have been receiving regarding this subject matter. It is hoped that at this meeting major attention will be given to answering as many of these questions (a copy of which is enclosed) as possible.

In order to facilitate discussion this particular meeting is being held to a small number of Extension field faculty and to the committee that is currently addressing itself to this subject matter. In all, from Extension and the University, approximately 20 persons will be attending. We appreciate your participating in this meeting and certainly Colonel Moore is also invited. In addition, Art Woldorf of the Ohio Department of Natural Resources and Earl Richards, from the Ohio Environmental Protection Agency, will be attending.

We will be conducting the meeting on a very informal basis involving the following topics:

1. Alternative Methods of Treatment and Implications--Dr. Richard White
2. Soil as a Filter
 - a. Physical Characteristics--Mr. Sam Bone
 - b. Chemical and Biological Characteristics--Dr. Robert H. Miller
3. Implementation Concerns as seen by
 - a. U.S. Army Corps of Engineers
 - b. Ohio Environmental Protection Agency
 - c. Ohio Department of Natural Resources

Again we appreciate your being able to participate in this meeting and we hope that this session can provide as much open discussion as possible. If you have additional questions regarding this meeting, please let us know.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul R. Thomas".
Paul R. Thomas
Associate State Leader
Community and Natural
Resource Development

QUESTIONS RAISED BY COUNTY EXTENSION AGENTS
FROM CRAWFORD, LORAIN, SENECA AND ERIE COUNTIES ON
CORPS OF ENGINEER'S PROPOSALS FOR DISTRIBUTION OF
SECONDARY EFFLUENT ON AGRICULTURAL LANDS

1. Where throughout the country are the locations of Land Disposal Systems now in use?
2. Where can we go for information as to results of these efforts?
3. What facts are available on how such a disposal effort affects soils and crops, i.e.:
 - a) What soil types will take this amount of water?
 - b) What crops can it be used on?
 - c) What are the problems, if any, with regard to accumulation of heavy metals?
 - d) Are there any long term problems involving residue build-up other than heavy metals?
 - e) Are there any problems relating to parasites, bacteria, disease and fungi-cides being transmitted through crops to humans or livestock.
 - f) What are the problems with regard to pollution and the supply of ground water, drilled wells and springs?
 - g) Can such land treatment be used on edible crops?
 - h) Are there problems of odor involved in using the system?
 - i) Is there a saturation point reached at which the soil ceases to be an effective filter?
 - j) Do you have information on horizontal and vertical movement of water in soils?
4. How will the system be implemented?
 - a) What is the role of the Regional Planning Commission?
 - b) What is the role of the county and municipal governments?
 - c) What is the role of the E.P.A., State Dept. of Health, Agriculture, and Envir. Res. Inst?
 - d) What is the role of local health boards?
 - e) What is the role of the Conservancy Districts?
 - f) Will local communities be able to tie into the system from Cleveland?
5. What is the complete chemical composition of the effluent?
6. Will the storage lake sustain life (ie. recreation, etc.)?
7. Will the governing body lease land, contract for its use or buy it?
8. Who will be the governing body and who will be responsible for handling the operation?
9. Who makes decisions as to when water will be turned on and off?
10. What are the amounts of nitrogen, phosphorus and potassium currently going into ground water from normal rainfall?
11. Who decides where the pilot project will go?
12. How can USDOI Committees be most helpful to the Corps?
13. Can water be taken from secondary treatment to land treatment rather than going to tertiary treatment?

14. What should be Extension's role in disseminating information with regard to this system?
15. Are present soil survey data adequate to indicate percolation rates necessary to deal with problems involved with disposal of effluent on agricultural lands?
16. How can Extension best establish a good liaison and understanding with personnel in the Corps of Engineers?

INFORMAL COMMENTS AND ANSWERS TO QUESTIONS RAISED BY COUNTY EXTENSION AGENTS

1. Where throughout the country are locations of Land Disposal Systems now in use?
 - a. See DAEN-CWP-U Subject: Land Disposal as an Alternative for Waste Treatment at Civil Works Projects with inclosure (inclosed).
 - b. See Appendix A of CRREL report.
 - c. Aerated lagoon. See inclosed report from Franklin, Ohio.
2. Where can we go for information as to results of these efforts?
 - a. See references in back of CRREL and Washington State University Reports (already furnished).
 - b. Pennsylvania State University.
 - c. Dr. Thomas Hinesley, Scientific Advisor to Secretary of the Army.
3. What facts are available on how such disposal effort affects soils and crops?
 - a. What soil types will take this amount of water? Drainage tile system will be required. Tile spacing for different application rates and soils will have to be developed through test sites.
 - b. What crops can it be used on? At the present time consideration is generally given to forage crops, corn, hay, pasture, sod farms and trees. Crops such as orchards and cooked vegetables may be acceptable in the future. Basic requirement is good plant removal of nutrients.
 - c. What are the problems, if any, with regard to accumulation of heavy metals? Experiments conducted to date by Dr. Hinesley do not indicate adverse effects of uptake of metals into crops. Metals are expected to be retained in the soil and not cause a problem except over a long period of time. Additional and continuing studies need to be made. The proposed alternatives are based on the assumption that any toxic substance or heavy metal that is a problem will have to be treated out of the system by the industry.
 - d. Are there any long term problems involving residue build-up other than heavy metals? In excessive proportions, sodium causes destruction of the granular nature of the soil particles and produces soil clogging. The parameter (Sodium Adsorption Ratio) used for measuring the sodium fraction of the cations should be less than 10 to produce no detrimental effects. The S.A.R. of typical secondary effluent is 4.6.
 - e. Are there any problems relating to parasites, bacteria, disease and fungicide being transmitted through crops to humans or livestock? Effluent will be disinfected prior to storage and eventual irrigation. Organisms of concern include amoebic cysts and bacterial spores which are not destroyed by disinfection. Past experience has shown that pathogens and viruses have a short life span in the soil. Long termed experience of inbred cattle at the sewage farm at Melbourne, Australia has demonstrated a reduced incidence of rejection of beef for bacterial contamination than for neighboring farms.
 - f. What are the problems with regard to pollution and the supply of ground water, drilled wells and springs? All irrigation land is proposed in tile drainage, thus collection of the percolate and return to surface

streams. A continuing monitoring should assure early detection of any change in existing groundwater levels and quality.

g. Can such land treatment be used on edible crops? Irrigation of edible crops which are consumed raw is not recommended. Prof. R. B. Krone has said that wide experience in irrigation with treated sewage indicates that it is safe provided that at least primary treatment is given, and provided the crops are not consumed directly by humans.

h. Are there problems of odor involved in using the system? Odors can be prevented by ensuring an aerobic condition in the storage basins and in the soil profile. These are design and operation considerations.

i. Is there a saturation point reached at which the soil ceases to be an effective filter? Saturation of the soil may be expected over a long period of time, after which the percolate will have equal quality to the irrigation water. That time may be several hundred years.

j. Do we have information on horizontal and vertical movement of water in soils? The infiltration capacity and percolation rate of each soil type is included in the land treatment material handed out at the February 6 meeting. Copy of the material is inclosed.

4. How will the system be implemented?

a. What is the role of the Regional Planning Commission? Regional Planning Commissions are usually concerned with broad, long range planning for a region; short range planning for implementation, engineering and design would probably be accomplished by the responsible agencies or their consultants. The Regional Planning Commissions usually would have to approve the plans of the implementing agencies as being in conformance with the long range plans for the region. Certain regional planning commissions have been set up specifically to coordinate planning activities and review implementation plans for conformance before Federal funds are released under certain programs. Regional planning commissions would probably be asked to review and comment on any long range plans developed by other agencies.

b. What is the role of county and municipal governments? County or municipal governments are responsible for providing the necessary public services required by the area which they serve. In regard to wastewater systems there is a relationship between Federal EPA and the State of Ohio EPA. The Federal Water Pollution Control Act Amendments of 1972 require that the states establish a group of priorities and identifying agencies, such as regional planning groups, responsible for planning. County sanitary engineering offices or city public utilities directors may be charged with implementation responsibilities. This must be left up to the state, county and municipality to work out based upon mutual agreement and the particular plan. In any event, if counties or municipalities carry out implementation they will have to comply with the requirements of the FWPCA-1972 in order to obtain Federal funds.

c. What is the role of the E.P.A., State Dept. of Health, Agriculture and Natural Resources? The role of the Corps of Engineers is one of providing planning and technical assistance. The role of the various state agencies does not change.

d. What is the role of local health boards? The role of the health boards in a regional wastewater system will probably be similar to their role at the present time. Their work could be increased, depending on the treatment system implemented, because of possible monitoring requirements.

e. What is the role of the Conservancy Districts? A Conservancy District or Watershed District, such as the Three Rivers Watershed District, could provide the basic vehicle for carrying out planning, implementation, and operation and maintenance for a regional system.

f. Will local communities be able to tie into the system from Cleveland? Our report will address this possibility, although the system has not been designed to include local communities along the route of the tunnel. Before a plan involving major land treatment was implemented, the study should be broadened to consider in detail those communities which would want to tie into the system.

5. What is the complete chemical composition of the effluent? The chemical composition of the effluent that would be sprayed on land depends on the particular inputs to treatment plants but typical characteristics can be assigned. I have included some typical or average characteristics which have been displayed in several technical reports as noted.

6. Will the storage lake sustain life (i.e. recreation, etc.)? I doubt if the storage areas would be utilized for water contact activities although there should be possibilities for peripheral activities such as hunting, wildlife areas, etc. Aquaculture may be a possibility.

7. Will the governing body lease land, contract for its use or buy it? It is difficult at this time to predict what means might be used in Ohio to obtain any land necessary for land treatment areas. The method could vary in different parts of the state. For study purposes and to develop costs for comparative purposes, we have included the purchase of any land required. It is hoped, however, that the utilization of some relatively small test areas would demonstrate the value of effluent as irrigating water and encourage the retention of the land in private ownership.

8. Who will be the governing body and who will be responsible for handling the operation? This has not been fully addressed but our institutional study should provide some suggestions. We feel quite strongly that any plan calling for transport of effluent from the Cleveland urban area to agricultural lands outside of the watershed would have to have a governing body with representation from both areas.

9. Who makes decisions as to when water will be turned on and off? The governing body referred to in question 8 would be involved in this. The data developed from the test areas would assist in establishing general application criteria. Day to day weather conditions would have to be considered.

10. What are the amounts of nitrogen, phosphorus and potassium currently

going into the ground water from normal rainfall? From the question it is not clear whether they are asking about nutrients actually contained in rainfall or those nutrients leached out of commercial fertilizers and carried into the ground water. Our consultants have a detailed section on the review of ground water characteristics in the proposed land treatment areas. With proper farm management practices, subsurface drainage, and monitoring system the nutrients contained in the effluent should cause no problem to the ground water. Spray irrigation would literally "spoon feed" the nutrients to the crops during the growing season and be less likely to cause a problem of leaching out than the present single large application of commercial fertilizer.

11. Who decides where the pilot project will go? The Corps report will recommend that certain types of early action projects be undertaken. In each case the early action should meet some local need as well as provide some desirable data for the regional wastewater plan. The location of these early action or pilot projects will be determined by the State of Ohio and the local governments and their assessment of needs and priorities.

12. How can USDA Committees be most helpful to the Corps? Land treatment is gaining more favor as a means of recycling the nutrients of wastewater and gaining their value rather than dumping them into the streams and lakes or paying to have them removed. As with all new concepts and practices that can have an effect on agriculture, the USDA Committees should become as knowledgeable as possible about the concept. They should look at this as an opportunity to provide information to the agricultural community since the Corps is involved only on a short term basis in that area. The Committee can assist and advise on farm management practices, irrigation and drainage methods, and crop patterns that would be compatible with land treatment of effluent.

13. Can water be taken from secondary treatment to land treatment rather than going to tertiary treatment? The usual intent is to provide tertiary or advanced treatment by land treatment rather than by plant treatment. Under that system effluent which has been provided secondary treatment in activated sludge plants or aerated lagoons is used to irrigate growing crops. The crops and the filtering through the soil provides the advanced treatment.

14. What should be Extension's role in disseminating information with regard to this system? The Extension Service should stay in close contact with the Corps in order to get the facts on land treatment and the ongoing study. They will then be able to discuss the concepts with individual farmers and relay those questions and problems which they cannot answer. Whenever desirable the Extension can set up information meetings which the Corps can attend. We have a list of about 2000 individuals and groups on our mailing list. Additional contacts that the Extension Service may already have or may develop can be added to the list. We will probably have two or three more mailings before the study is complete.

15. Are present soil survey data adequate to indicate percolation rates necessary to deal with problems involved with disposal of effluent on agricultural lands? Our consultants have been quite impressed with the amount of data available through County soil surveys and other sources. The available data is adequate for study purposes and for general layout and costing. More detailed soils data would be required before any test area was laid out and additional data would be obtained before any program beyond test areas was undertaken.

16. How can Extension best establish a good liaison and understanding with personnel in the Corps of Engineers? Have meetings where questions and problems can be discussed. Through established contacts with individual farmers and agricultural groups determine misunderstandings and problems that arise from the land treatment concept and bring these to the attention of the Corps. Have an informal working arrangement whereby information and comments can be readily exchanged.

An open letter to whom it may concern:

March 20, 1973

The Members of the Huron County National Farmers Organization express our opposition to the Army Corps of Engineer's proposed wastewater management program for the Cleveland/Akron/Three Rivers Basin.

We do not want an effluent reservoir in our area.

Our land can not stand the suggested amounts of water.

When considering the nutrient value of the effluent compared to the cost of application, we find that we would lose money.

We do not want our Federal tax money to be used to destroy our own family farms. We in rural areas have the disposal expenses of our wastes. Let those in that metropolitan area pay for their own waste disposal.

Sincerely,

Kel S. Loveling
Pres. Huron County NFO

John Dray
Member Huron County NFO

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Sincerely,


Nael S. Cowling
Pres. Huron County NFO


Richard J. Mahl
Member Huron County NFO

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Sincerely,


Nell S. Cowling
Pres. Huron County NFO


Ray Worcester
Member Huron County NFO

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March 20, 1973

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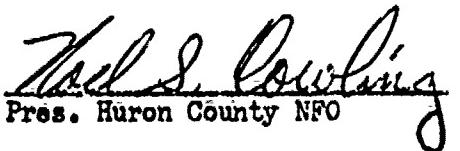
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Sincerely,


Hazel S. Cowling
Pres. Huron County NFO


Virgil B. Cramer
Member Huron County NFO

DUSH AND ECKSTEIN
ATTORNEYS AT LAW
THE WILLARD UNITED BANK BUILDING
WILLARD, OHIO 44890

JOSEPH F. DUSH
FRANKLIN D. ECKSTEIN

TELEPHONE 935-1661
935-7412

March 27, 1973

United States Army Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Sirs:

Enclosed is petition pertaining to proposal to use parts of Huron County for disposal of affluent from Cleveland-Akron areas.

Very truly yours,

JFD/sd
Encl. [initials]

(NOTE: PETITION CONTAINS 720 SIGNATURES)

199

March 31, 1973

To The Hon. Robert Taft, U.S. Senator
Hon. William Saxbe, U.S. Senator
Hon. John M. Ashbrook U.S. Congressman
Ethel Swanbeck, Representative to the Ohio General Assembly

The Willard Conservation League has for many years operated its facilities in Huron County in connection with which it conducts sporting and educational activities pertaining to conservation of wildlife and natural resources. It has an active program with about 385 members and owns a facility comprising 195 acres, upon which is located a lake and buildings.

Whereas, the United States Army Engineers have made a proposal to transport effluent from sewerage from the cities and municipalities of Cleveland and Akron and other surrounding areas to Huron County and adjoining areas with the plan to spray said effluent over and upon real estate in these areas for purposes of disposition, and

Whereas, members of the Willard Conservation League question the advisability of this procedure for the following and other reasons:

1. Streams in this area are already contaminated and because of this contamination, birds of prey are suffering a genetic breakdown and also because of genetic breakdown, certain other species of wildlife, including owls and hawks, are suffering a diminished population.

2. It is doubtful that the soil in this area would accept as much liquid as the Army Engineers propose to place upon these soils.

3. The army engineers cannot assure anyone that offensive odors and the smell will not accompany their proposed disposition of the effluent. These odors and smells would make this area a less desirable place to live.

4. Rural areas in this area are already having trouble finding potable water.

Now therefore, the following officers and members of the Willard Conservation League and area conservationists hereby protest the plan as announced by the army engineers and request that it be reconsidered.

Frank E. Bunting, residing at Rt 4, W. Hill Rd., Offic
Frank E. Bunting

Fred L. Sander residing at 207 Myrtle Westfield
Vice President

George E. Painter Jr. residing at 315 S. Main St. Hilliard, Ohio
Secretary

Clarence P. Russ residing at 221 Spring St. Hilliard, Ohio
Treasurer

Bernard C. Mendenhall residing at 715 Spring St. Hilliard, Ohio
Trustee

Willie Start residing at 929 Mayfield Road, Hilliard, Ohio
Trustee

Lester Heisler residing at 671 Spring Street ^{Willard, Ohio}
Trustee

Howard Begeman residing at P.O. 171 Hilliard, Ohio
Trustee

William H. Daniels residing at 83 Willard, Ohio
TRUSTEE

ATTACHMENT 9

**REPRESENTATIVE
NEWSPAPER ARTICLES**

Cadiz, OH, Harrison News-Herald, 7 Dec 72

Might be coordinated with a year's time.

Sludge to be pilot project for Harrison County

Plans are in the offering for the grain production among others. Inauguration of a pilot project in "But its too early to make any comm- Harrison County which would prove, to an extent, the beneficial or unbeneficial qualities of chemically treated sludge on ventured. Bennington surface mined lands.

He added that he would have to meet The pilot, in all probability, would be with his superiors and with local parties under the auspices of the Ohio Department of Natural Resources, but Harrison County extension agent Howard Bennington has offered his efforts as an agriculturist in coordinating the efforts of both state and local interests to see the project through.

The colonel met with nearly 50 county civic and local leaders last Wednesday evening to explain the program and answer any questions pertaining to the use and benefit to the area.

Bennington's interest in "sludge" began last week when Col. Robert Moore, chief of the Buffalo District U.S. Army Corps of Engineers, came to Harrison County to enlighten the public on the program set forth by the Corps which would transport the substance from the Greater Cleveland area, its three rivers and Lake Erie, by pipeline to Eastern Ohio for treatment of stripped and orphaned lands.

Overall the reaction to the session proved positive and Col. Moore commented that he had received more response to the study at the meeting than he had at any session in the Cleveland area, where the refuse problem exists.

Earlier Session

But earlier in the day he met with a smaller group including Hanna Coal Co. president Ralph Hatch and reclamation director Art Wallace, owners of the pipe submission of his preliminary report to the line being considered for the trans-state in March. He added that this ap-sertation; Bennington; Emerson Roman, appeared to be the most rational approach to asst. superintendent of the Harrison Hills satisfying the general skeptic besides schools; Milton Ronsheim and T.T. answering biological, horticultural and (Turner) Mills.

In his camp the colonel had William Dawson of Huntington District of the corps, Donald M. Liddell, chief of planning for Buffalo; and Thomas Maloney, public health questions which would arise if the plan were implemented on a full scale.

During that session Moore explained the landscaping, nursery stock production and background of the Corps' study which

Cadiz, OH, Harrison News-Herald, 7 Dec 72

dates to a Refuse Act of 1899. "We were looking to see 'is it feasible' and we did not really disturbed by Moore's remarks look at costs."

"Since it is an effluent from the third stripped land." During the discussion Hatch seemed apparently aimed at "pitying the poor step of sewerage treatment now required. "I think you'll be interested to see the by the state, our sludge looked so good and work we've done in reclamation," Hatch your land looked so poor the first priority told him. "It would be to your benefit to was to treat strip mines."

Moore explained that priority was determined by a group of Kent State University students from varied backgrounds: economics, sociology, familiarity with the hills of Kentucky and biology, etc.

Once the plans for the project are completed and the priorities are verified, he continued, the results will be handed to the state Department of Natural Resources for implementation.

One of the phases of the project is to feel the pulse of the public and barometer their attitude, he said.

"I'm not selling anything," said the colonel, "I just present the facts and let them speak for themselves."

State (treating land with waste material) but its not human but sheep and it's not treated but raw."

"The primary value here is to restore lands to their original use. I'm not saying you'll be farming immediately but you can grow sufficient foliage to raise cattle and then in maybe 20 years then you can begin plowing."

The study, which in the final form will be submitted to the state in June, covering a minimum 300 acres a year. Both Hatch and Col. Moore agreed that inches thick. It will take several years to cover the 210,000 acres that need treatment in this area."

But, he emphasized, if public acceptance was still the project could be moved to other stripped areas or the sludge could be applied to a land of lesser priority, such as already cultivated fields. "I can even bag this stuff and sell it on the open market."

Harrison County, Hatch emphasized, and sprayed on in layers until its about eight monitoring both ends of the pipeline would be necessary for maintaining a "good quality material." "If they don't maintain the levels you set up. Make sure it meets all the requirements you wish. Keep monitoring and go slowly." He concurred that a pilot project, operational in the county, might be a satisfactory method of checking several of the quality factors. "You could have it trucked in. And I'll help in anyway I can."

Early Water Action Plans Feature Land Filter Use

By William D. McCann

The U.S. Army Corps of Engineers is recommending three early action programs to the state as first steps toward cleaning northeast Ohio's dirty waters.

The programs include two small waste water treatment projects using the land as a filter.

IN ONE PROJECT treated sewage wastes of a town of about 14,000 would be piped to about 400 acres of farmland in north-central Ohio. In the second project treated waste water would be piped to parkland or grassland in northeast Ohio.

In addition, the Corps of Engineers is recommending the state get under way a small project of piping or trucking sludge, the solid material left from the treatment of sewage, to strip-mined areas in southeast Ohio to revitalize the scarred land there.

The idea for the early action projects would be to show farmers, politicians and others that land disposal of wastes will work to everyone's benefit, according to Col. Robert L. Moore, district engineer for the Buffalo District, which includes this area. He recommended that projects should begin next year to demonstrate that they could be done on a large scale in the future.

THE "BACK to nature" land disposal concept is a key strategy in the corps' comprehensive waste water management study for the area. The study, which has been nearly two years and \$2 million in the making, is expected to be completed in the spring.

The study covers about 1,500 square miles in eight counties. It includes the Rocky, Cuyahoga and Chagrin rivers and the Lake Erie shore.

The study includes plans for treating and disposing of wastes from municipalities, industries and storm water runoff. At present the Corps of Engineers has listed 12 alternative ways of approaching the problem. They include physical-chemical treatment, biological treatment, land treatment or combinations of the three. Detailed reports on three of the alternatives recommended by the corps are to be completed by May.

All the information will be turned over to state and local officials who will have to make final determinations.

COL. MOORE and other

engineers have been meeting with various groups during the past two weeks on the alternatives. The aim of the meetings is to find out what alternative plans the public believes will be best. Col. Moore said.

Col. Moore said the alternatives would be compatible with plans already under way by various communities in the area to reduce water pollution. Some proposals would meet state requirements. Others would go a step further to eliminate all discharges into streams to meet future federal requirements. Those proposals designed to meet federal requirements would cost an estimated \$17 billion to \$20 billion over a 50-year period. This would include construction and operating costs.

COL. MOORE admitted the corps faces a difficult task in getting the public interested in land disposal.

"So far, some of the farmers have shown interest, while others just don't want it," he said. "The key is to get them to understand that it will help them."

One problem faced by the corps is overcoming the past reputation it has gained as an environment destroyer, a reputation earned from building dams, straightening streams and undertaking other ecologically damaging projects under orders from Congress.

A second problem is that the idea of using sewage wastes as a fertilizer is not psychologically acceptable.



Col. Robert L. Moore

But in principal the method is ecologically sound. It has been tried on a small-scale successfully at Penn State University for many years, and a larger operation is planned for Muskegon, Mich.

UNDER THE CORPS' proposal, a 16-foot diameter pipeline would carry wastes from area plants to the farmland after the wastes had received secondary treatment at the plants. The waste water would be sprayed into ditches where it could filter into the soil.

Normally these wastes would get dumped from the treatment plants to the lake or streams. Although the bacteria has been eliminated, the wastes still are rich in nutrient materials that promote growth of aquatic plant life.

With land disposal, these wastes would help fertilize the soil, and there would never be any worry about drought, Col. Moore said.

Farmers would no longer need to add artificial ferti-

CLEVELAND, OH, PLAIN DEALER - 13 Dec 72

lizers, which often run off into streams and cause pollution problems, he said.

Nutrients would be taken up by the soil and plants. Water would soak through the soil to clay agricultural tile underlying the land and would run off like rain water into the streams, he added.

AREAS WITH soil conditions and low population densities suitable to farmland disposal are in southwest Huron, southeast Seneca, northern Crawford and northwest Richland counties.

Suitable conditions also exist in parts of Geauga, Portage, Cuyahoga, Medina and Lorain counties. In these areas parks, golf courses or other greenbelt areas could be used.

At the same time, the

sludge would be treated to eliminate odors and bacteria and would be piped to Harrison County, Col. Moore explained. He estimated that in three to five years barren land could be turned into grazing land. A pipeline once used to transport coal to Cleveland could be used for transporting sludge, he added.

Residents Voice Objections To Waste Water Proposals

Willard area farmers and land owners don't think much of an Army Corps of Engineers plan to fertilize their crops by sprinkling the land with waste water effluent from Cleveland and Akron.

A number of farmers as well as some political leaders were brought together Monday night by the Willard Rotary Club to

get the story firsthand from an Army engineer and to have their questions answered. The club program was arranged soon after the Corps' plan was revealed a few weeks ago and 30 guests were invited to hear it.

Among them were Congressman John Ashbrook of Johnstown, who will be Huron county's Congressman after Jan. 1,

State Senator Robert Corts of Elyria, and State Representative Ebel Swantek of Huron.

The speaker was Tom Liddell, chief of the planning branch of the Buffalo district of the Army Corps of Engineers.

Grocers and farmers, after seeing a detailed slide presentation of 12 slides to plans developed by the Corps, voiced some

objections and raised some questions about the plans that involve sprinkling effluent on crop lands, called Land Use Systems.

They included these objections:

—That soil around here is the least permeable in the state; it will not handle the two inches of water a week that the plan calls for;

—That vast areas around Willard would have to be inundated to provide a storage basin for the effluent;

—That the waste might build up harmful elements that would become toxic, even to forage crops;

—That some areas for such a plan should be found within the Cleveland and Akron vicinity without piping their waste west;

—That both state and federal governments tend to forget about rural people and their wishes;

—That objectionable odors and air pollution could result from the storage basins and the spraying;

—That it does not make economic sense to inundate or ruin for vegetable production an area like the Celeryville muck which is the most productive land in the state.

—That it just won't work—no way.

To such objections Liddell offered these answers:

The muck itself would not be taken over by the plan since it is so valuable. In blocking out a general section of the tri-county meeting place of Huron, Seneca, and Crawford counties, he said, no attempt was made to set up distinct boundaries. Exact areas would have to be determined.

Liddell explained that the sprinkling plan depended on extensive tiling of fields, probably with 6-inch tiles laid 15 feet apart. With such tiling, he said, even the dense soil around here could handle a lot of water and benefit from it. Tighter soils do a better job of cleaning the effluent than loose soils, he pointed out.

The speaker said there is not enough land closer to Cleveland and Akron that is not industrialized or residential to locate a Land Use System there.

He said that since the effluent is sprinkled on the land by gravity rather than sprayed, no problem of air pollution is created. He also asserted that the liquid would be only the effluent produced after secondary treatment in the cities. "This is probably cleaner than the creek water you are now using for irrigation," he asserted.

Liddell said that the Corps itself has no stake in the project. The Corps was asked by the state of Ohio to make a study and propose some solutions to the problem of the terribly polluted Cuyahoga River and also the less polluted Chagrin River and Rocky River, to reclaim them for recreation, pleasure, beauty, and to stop pollution. Any further action is up to the state.

He repeated that state officials had promised that no plans would be forced on the people of

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an area. "Any plans not acceptable to people will not be carried forward," he said.

Some spokesmen in his audience apparently remained skeptical of this view. He was asked if he had found any area people who did not object. Liddell, who has been giving talks on the plan for several weeks, said he had not found opposition and had found some interest.

A similar proposal has been made to pipe the effluent to coal strip mine areas and the speaker said residents in those areas were interested. There is also interest in Bucyrus, he said.

He stressed that there is only one real reason to go to a Land Use System of treating sewage effluent rather than processing it in conventional treatment plants, "that is to gain the use of nutrients in the waste," he asserted.

He said that sprinkling two inches of effluent per week on an acre of ground for 25 weeks would be equal to one ton of 12-8-10 fertilizer. The Corps feels that such material could only be used on forage crops, not crops for direct human consumption.

Liddell brought one note of comfort to the farmers. The Corps' studies show that very little pollution of streams comes from agricultural lands; cities and industries are the main polluters.

Much of the speaker's time and his slide presentation covered the basic pollution problem and the results of the study made by the Corps. (These facts were presented in an article on the study in the Dec. 7 Times.)

Interest in the topic was so keen that the meeting ran an hour past the usual adjournment time. After that, a dozen or more men stayed to see a motion picture which Liddell had, depicting the results of a 10-year experiment with land use treatment at Penn State College.

Liddell stressed that if the plan gets any degree of approval, a first step would be to test the land use system on a small area. He suggested that it would probably pay a small city to buy or lease 500 acres near its treatment plant for a land use experiment.

He urged his audience to keep an open mind on trying the plan. "That's the way we do things in America," he noted.

The 12 plans of the Corps meet, in various ways, either state or federal clean water standards which are certain to be enforced in coming years.

Besides the guests previously named, the list included the trustees and clerks of the four townships around Willard, several Celeryville growers, six of the seven city councilmen, Dr. George Lynn, Huron county health commissioner, attorney Kenneth Thornton, counsel for the Celeryville Conservancy District, and other citizens, farmers, and land owners. The dinner meeting was held in the Brunswick Grill.

Mark Brooker was the program chairman.

ATTACHMENT 10

**NOTICE AND HANDOUT MATERIAL
FOR
FINAL PUBLIC MEETINGS**

You are
Invited

by:

BUFFALO DISTRICT CORPS OF ENGINEERS
OHIO DEPARTMENT OF NATURAL RESOURCES
OHIO ENVIRONMENTAL PROTECTION AGENCY

TO THE FINAL
PUBLIC MEETINGS
on the WASTEWATER MANAGEMENT
STUDY *for the* CLEVELAND -
AKRON *and*
THREE RIVERS WATERSHED AREA

TUESDAY JUNE 5th - 7:30 PM
ELIZABETHAN ROOM
PUNDERSON STATE PARK LODGE
OFF ROUTE 87 - NEWBURY, OHIO

WEDNESDAY JUNE 6th - 7:30 PM
WILLARD HIGH SCHOOL
WILLARD, OHIO

THURSDAY JUNE 7th - 7:30 PM
CLEVELAND SOUTH HOLIDAY INN
EXIT 11 - OHIO TURNPIKE
BETWEEN CLEVELAND AND AKRON

FRIDAY JUNE 8th - 7:30 PM
PRESBYTERIAN CHURCH
WEST MARKET STREET
CADIZ, OHIO

over →

The series of final public meetings is intended to allow discussion of the study and the draft report. We need your input and comments in order to prepare the final report reflecting the ideas of the public. Please bring this notice to the attention of any others who may be interested.

Full sets of the draft report with supporting appendices are available at local libraries listed in the Summary Report and at County Clerks' offices in the following counties:

Ashland	Geauga	Medina
Crawford	Harrison	Portage
Cuyahoga	Huron	Richland
Erie	Lake	Seneca
Franklin	Lorain	Summit

Note: Appendix II does not appear in draft form; it will be completed after public review of the draft report and will be included in the final report.

The Draft Summary Report is available upon request from Buffalo District.

After the final report is prepared, it will be submitted to Corps of Engineers higher authority for examination, then released to the State of Ohio and the public for use in wastewater management planning in northeastern Ohio.

FOR ADDITIONAL INFORMATION CONTACT:

Donald M. Liddell, Chief Planning
Buffalo District Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

716 876-5454

Arthur F. Woldorf, Watershed Planning
Department of Natural Resources
65 S. Front St. Room 805
Columbus, Ohio 43215

614 469-4745

H. William Sellers, Chief Planning
Ohio Environmental Protection Agency
395 East Broad Street
Columbus, Ohio 43215

614 469-8868

**WASTEWATER MANAGEMENT STUDY
FOR THE
CLEVELAND-AKRON METROPOLITAN AND
THREE RIVERS WATERSHED AREAS**

**Information For
Final Public Meetings**

1. Libraries Having Full Draft Report
2. Maps of Plans A, B, and C
3. Summary of Impacts of the Plans
4. Preference Sets For Choice Among the Plans
5. Conclusions

For Additional Information Contact:

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1776 Niagara Street
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Columbus, Ohio 43215

614 469-8868

Libraries Having Full Draft Report

A full set of the draft report is available for public review at the following libraries in Ohio.

<u>City</u>	<u>Library</u>
Akron	Akron Public Library (Main) 55 S. Main Street
	East Branch 60 Goodyear Blvd.
	Maple Valley Branch 1293 Copley Road
	North Branch 183 E. Cuyahoga Falls Avenue
University of Akron Library 302 E. Butchel Avenue	
	Ashland Public Library 224 Claremont Avenue
Ashland	
Attica	Attica Public Library North Main Street
Avery	Ehove Joint Vocational School Library Route 250
Barberton	Barberton Public Library Park and Fifth Streets
Bedford	County Library-Bedford 155 Warrensville Center Road
Berea	Berea Branch Library 1 Tract Street
Bellevue	Ritter Library Baldwin Wallace College
	Bellevue Public Library 224 E. Main Street

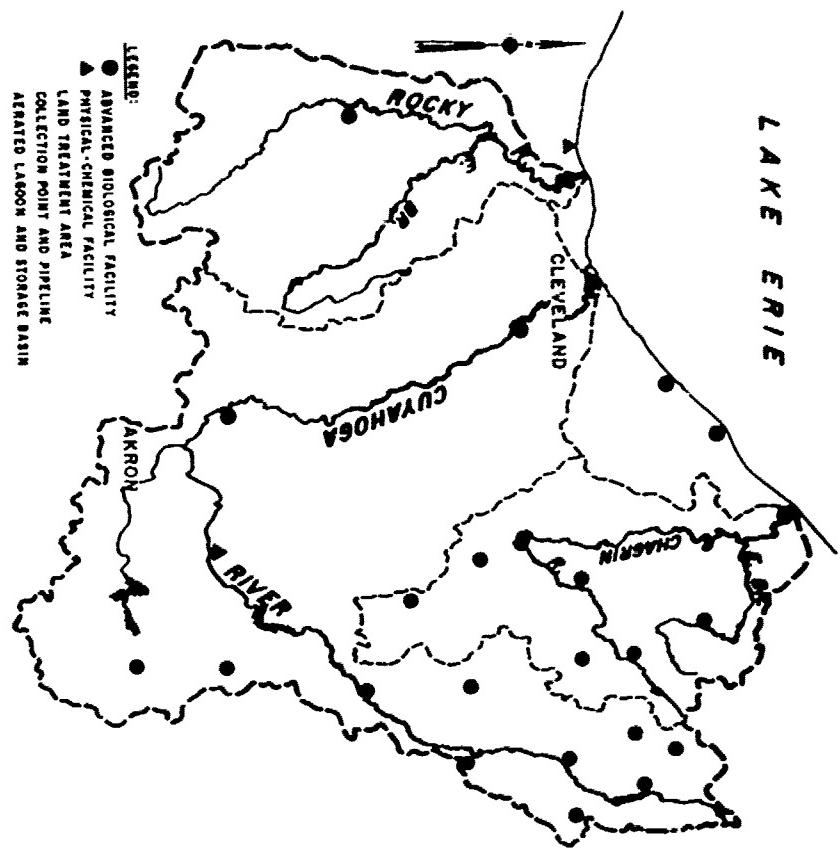
<u>City</u>	<u>Library</u>
Bucyrus	Bucyrus Public Library 200 E. Mansfield
Burton	Burton Public Library
Cadiz	Cadiz Public Library Court House
Canton	Canton Public Library 236 Third Street S.W.
Chagrin Falls	Chagrin Falls Public Library 100 E. Orange
Chardon	Geauga County Public Library 108 S. Hambden Street
Cleveland	Cleveland Public Library 325 Superior Avenue (Main)
	Carnegie West Branch 1900 Fulton Road
	Euclid 100th Street Branch 9917 Euclid Avenue
	55th East Branch 5510 Superior Avenue
	Harvard-Lee Branch 4125 Lee Road
	Lorain Branch 8216 Lorain Avenue
	Miles Park Branch Miles Park and E. 93rd Street
	Nottingham Branch 760 E. 185th Street
	South Brooklyn Branch Corner Pearl Road & Henritz
	West Park Branch 3805 W. 157th Street

<u>City</u>	<u>Library</u>
Kent	Kent Free Library 312 W. Main Street
	Kent State University Kent State University Library
Kirtland	Kirtland Public Library 9189 Chillicothe Rd.
Lakewood	Lakewood Public Library 15425 Detroit Avenue
Mansfield	Mansfield Campus Library Ohio State University 2375 Springmill
	Mansfield Public Library 43 W. Third Avenue
Maple Heights	Maple Heights Regional Library 15901 Libby Road
Medina	Franklin Sylvester Library 210 S. Broadway
Mentor	Mentor Public Library 8215 Mentor Avenue
Milan	Milan Public Library Church Street
Monroeville	Monroeville Public Library 34 Monroe Street
New London	New London Public Library 67 S. Main Street
Norwalk	Norwalk Public Library 46 W. Main Street
Oberlin	Carnegie Library Oberlin College
Painesville	Morley Library 184 Phelps Street

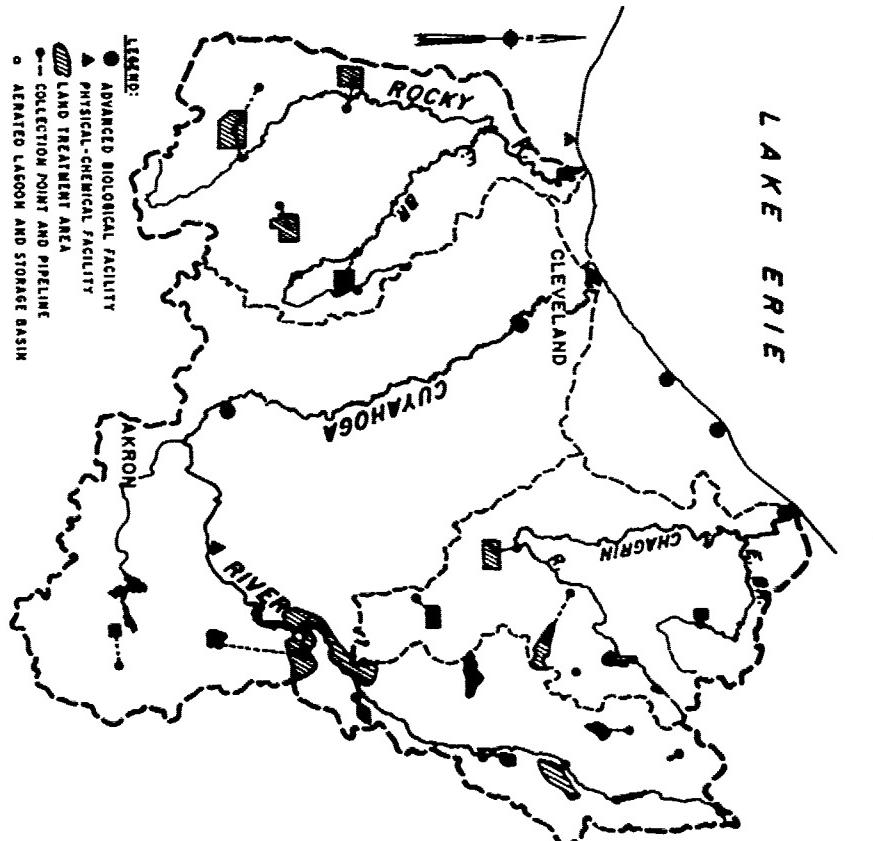
<u>City</u>	<u>Library</u>
Cleveland	Cleveland Heights-University Heights Public Library 2345 Lee Road
	Grasselli Library John Carroll University North Park and Miramar
	Freiberger Library Case Western Reserve University 11161 East Blvd.
	Cuyahoga Community College Library Metropolitan Campus 2900 Community College
Columbus	Ohio State University Library 1858 Neil Avenue
Crestline	Crestline Public Library W. Bucyrus Street
Cuyahoga Falls	Taylor Memorial Public Library Third Street and Broad Blvd.
Euclid	Euclid Public Library 631 E. 222nd Street
Fremont	Birchard Public Library Sandusky County 423 Croghan Street
Galion	Galion Public Library Association 123 North Market Street
Green Springs	Memorial Library North Broadway Street
Hudson	Hudson Library and Historical Society 22 Aurora Street
Hiram	Portage City District Library 6813 Wakefield Road
	Teachout-Price Memorial Library Hiram College
Huron	Bowling Green State Universtiy Fireland Campus Library 901 Rye Beach Road

<u>City</u>	<u>Library</u>
Parma	Cuyahoga Community College Library 7300 York Road
Peninsula	Peninsula Library 6105 River View Road
Ravenna	Reed Memorial Library 167 E. Main Street
Rocky River	Rocky River Public Library 19875 Riverview Avenue
Sandusky	Library Association of Sandusky Corner of Columbus Avenue & W. Adams
Shelby	Marvin Memorial Library 34 N. Gamble Street
Sycamore	Sycamore Community Library E. Seventh Street
Shaker Heights	Shaker Heights Public Library 3450 Lee Road
Stow	Stow Public Library 3512 Darrow Road
Tiffin	Beeghly Library Heidleberg College
	Tiffin-Seneca Public Library 108 Jefferson Street
	Tiffin University Library 139 Miami Street
Twinsburg	Twinsburg Public Library 9840 Ravenna Road
Upper Sandusky	Carnegie Public Library
Wadsworth	Ella M. Everhard Public Library 132 Broad Street
Westlake	Porter Public Library 27054 Center Ridge Road

<u>City</u>	<u>Library</u>
Willard	Willard Memorial Library 6 W. Emarld Street
Willoughby	Willoughby Public Library 38129 Euclid Avenue
Willowick	Willowick Public Library 263 East 305th Street
Wooster	Wayne County Public Library 304 N. Market Street

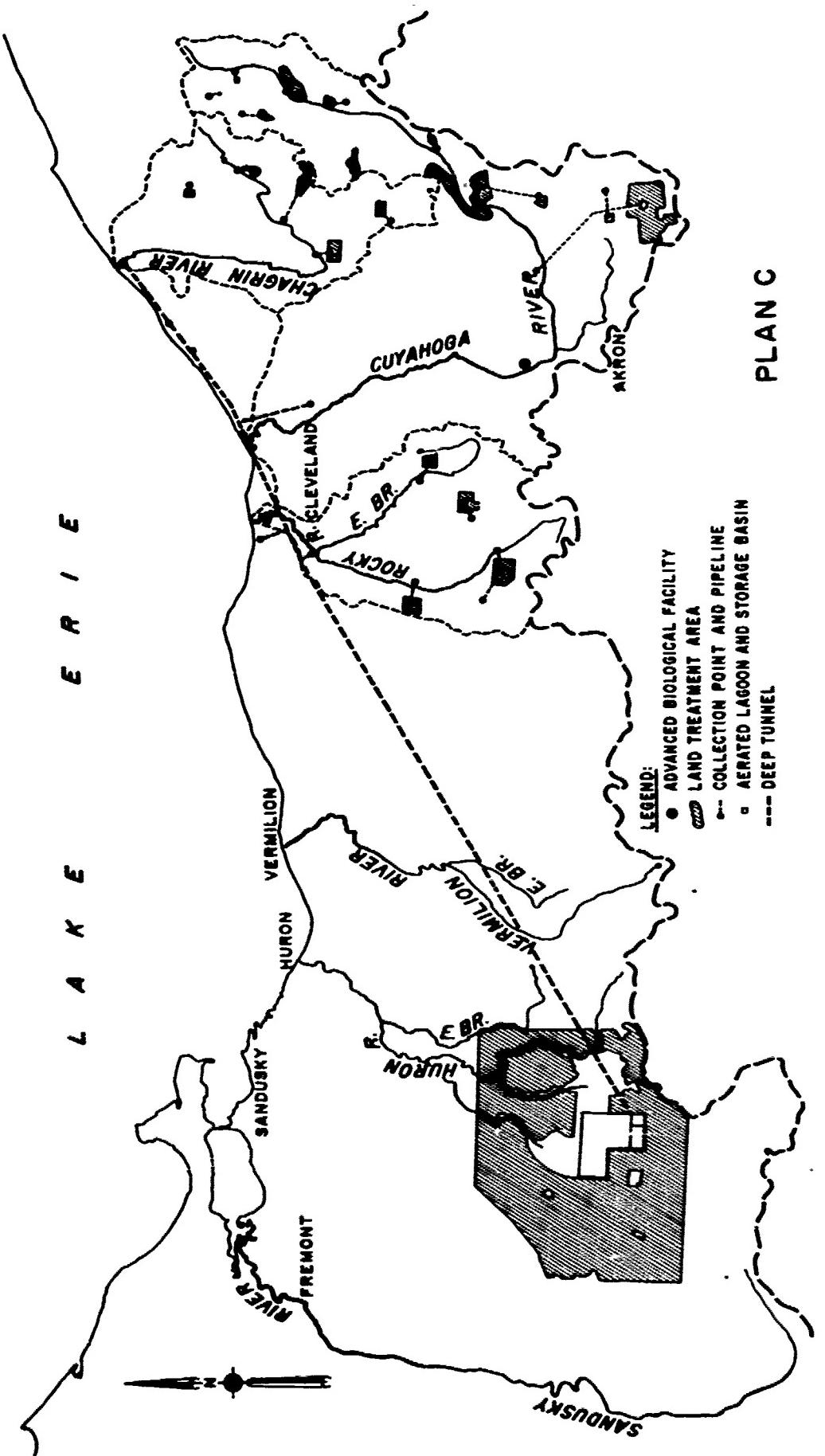


PLAN A



PLAN B

L A K E E R I E



PLAN C

Table 4

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I am sure you have had a full view of the capital costs, plan long of the operation and maintenance costs of my plan as outlined by the State of Ohio, and I hope you will give me your opinion.

The word "jacketed", as used in this note, refers to the hepatic or gall-bladder. The green liver described was ruptured with similar plants in the rest of this and elsewhere in the Malabar.

table 1

14 Potential environmental issues are discussed in the environmental section above.

Table 47
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Table 4.1. (Continued)

Summary of Impacts Predicted by Plan B at Level II

Impact Potentials		Study Area: Three Rivers Watershed					Rest of Ohio			Rest of United States			Internationals				
		Industry	Agriculture	Commercial	Residential	Miscellaneous	Owner of System	Rest of Ohio	Owner of System Required	Ohio	Commercial	Lake Erie Basin	Federal	Tributary	Farmers	Industrial Groups	
EFFECTIVE USES		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Agriculture	Potential	—	Equivalent fertilizer value-\$60.00 per acre.	—	Potential reduction in demand for commercial fertilizers.	—	—	—	—	—	—	—	—	—	—	—	—
	increases	—	increasing acreage, decreasing crop acreage, decreased prices.	—	Sufficient quality in dairy production and dairy support industries.	—	Stable applications may stabilize agricultural production.	—	—	—	—	—	—	—	—	—	—
Industrial	Potential	—	Industrial	—	Industrial	—	Industrial	—	Industrial	—	Industrial	—	Industrial	—	Industrial	—	Industrial
	increases	—	demand for water and energy	—	water and energy	—	water and energy	—	water and energy	—	water and energy	—	water and energy	—	water and energy	—	water and energy
Manufacturing	Potential	—	Industrial	—	Industrial	—	Industrial	—	Industrial	—	Industrial	—	Industrial	—	Industrial	—	Industrial
	increases	—	demand for water and energy	—	water and energy	—	water and energy	—	water and energy	—	water and energy	—	water and energy	—	water and energy	—	water and energy
Power Plants	Potential	—	Water storage	—	Water storage	—	Water storage	—	Water storage	—	Water storage	—	Water storage	—	Water storage	—	Water storage
	sales taxes	—	water control	—	water control	—	water control	—	water control	—	water control	—	water control	—	water control	—	water control
Salts	Potential	—	Water storage	—	Water storage	—	Water storage	—	Water storage	—	Water storage	—	Water storage	—	Water storage	—	Water storage
	sales	—	water control	—	water control	—	water control	—	water control	—	water control	—	water control	—	water control	—	water control
Public Protection	Potential	—	Potential enlargement of 2,000 persons to operate and maintain highly technical equipment and supervising treatment plants.	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	increases	—	Increase in water usage, particularly due to air pollution, increased population, changes in climate, changes in water resources.	—	Increase from increases in population, increased industrialization, and economic expansion.	—	Increase in number of persons employed in related agricultural and recreational activities.	—	Increase in number of persons employed in related agricultural and recreational activities.	—	Increase in number of persons employed in related agricultural and recreational activities.	—	Increase in number of persons employed in related agricultural and recreational activities.	—	Increase in number of persons employed in related agricultural and recreational activities.	—	Increase in number of persons employed in related agricultural and recreational activities.
Industries	Potential	—	Concentration increases, no emphasis is necessary on a single industrialization should be created.	—	Concentration of various industries increases, no emphasis is necessary on a single industrialization, diversity is crucial to industrialization.	—	Concentration of various industries increases, no emphasis is necessary on a single industrialization, diversity is crucial to industrialization.	—	Concentration of various industries increases, no emphasis is necessary on a single industrialization, diversity is crucial to industrialization.	—	Concentration of various industries increases, no emphasis is necessary on a single industrialization, diversity is crucial to industrialization.	—	Concentration of various industries increases, no emphasis is necessary on a single industrialization, diversity is crucial to industrialization.	—	Concentration of various industries increases, no emphasis is necessary on a single industrialization, diversity is crucial to industrialization.	—	Concentration of various industries increases, no emphasis is necessary on a single industrialization, diversity is crucial to industrialization.
	increases	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health & Safety	Capitalized Present	\$65.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Interest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Optimal	Capital	\$26.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Interest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Optimal + Maintenance	Capital	\$36.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Interest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Optimal + Average Annual	Capital	\$27.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Interest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Industrial Performance	Capital	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Interest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

✓ Financially compensated leases are generally considered to be any real or tangible leases in terms of full market value for land and related structures under the provisions of the National Pollution Discharge Elimination and Solid Waste Appliance

✓ It is estimated that the initial charges will range \$100,000 to \$150,000, and that the long term charges will range \$250,000 of the capital cost, plus 100% of the operation and maintenance costs of any plant certified by the State of Ohio.

NOTE: The term "potential", as used in this table, refers to the impacts which could occur if this plan for the Three Rivers Watershed was adopted with similar plans in the rest of Ohio and elsewhere in the Nation.

Potential unsecured lessees are generally considered to be any real or imagined lessee in excess of full market value for land and relocation assistance under the provisions of the Uniform Relocation Assistance and Real Property Acquisition Act of 1970.

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TABLE 4*b*
PREFERENCE SETS FOR CHOICE AMONG ALTERNATIVE PLANS BY RESIDENTS OF NORTHCENTRAL OHIO^{1/}

PREFERENCE SET 1

IN ORDER TO CHOOSE PLAN A-1, A-11 OR OVER PLAN C AS A RESIDENT OF NORTHCENTRAL OHIO MUST PREFER TO:

1. Ensure that all wastewater generated within the Three Rivers Watershed is treated within that Watershed, and not transported into Northcentral Ohio;
 2. Maintain freedom of choice of crop patterns and farm management, which can influence the efficiency for the efficient operation of the land treatment area to treat wastewater and grow crops;
 3. Avoid the anxiety over potential uncoordinated losses^{2/} of urban and rural families in Northcentral Ohio who reside on the 14,000 acres of land that must be acquired in fee simple for aerated lagoons and winter storage basins;
 4. Avoid the potential for occasional odors from aerated lagoons;
 5. Avoid the anxiety of residential families and farmers over the potential for restricted community development resulting from contamination of land for the land treatment of wastewater; and
 6. Avoid the significant modification of the current local institutional framework, which is necessary to permit efficient operation of the multi-regional wastewater management system.
 7. Avoid the potential for increased flooding, reduced aquatic habitat, and increased sediment transport in the tributaries of the Vermilion, Huron, and Sandusky Rivers which would result from the transport of water from the Three Rivers Watershed;
 8. Avoid irrigation of farmland at rates in excess of that quantity necessary for optimum crop production;
 9. Avoid the transport of raw sewage after 1990 via tunnel from the Three Rivers Watershed Area to Northcentral Ohio.
- AND BE WILLING TO:
1. Forgo the opportunity to increase crop yields, and therefore farmer income, through agricultural recycling of nutrients and water on 118,000 acres;
 2. Exploit the opportunity to decrease farm production costs by maintaining a farmer income, through agricultural recycling of nutrients and water on 118,000 acres;
 3. Prevent crop losses due to drought;
 4. Accept the installation of the necessary underdrains, irrigation hardware and other capital improvements to the 118,000 acres of farmland, at no cost to the residents of Northcentral Ohio;
 5. Accept the potential for controlled development of manufacturing and power industries which can use the quality of water supply contained in the water storage basins;
 6. Exploit the opportunity to protect 122,000 acres of open space from urban sprawl; and
 7. Accept the sustained discharge of high quality water from the land treatment area into tributaries of the Vermilion, Huron and Sandusky Rivers.
- AND BE WILLING TO:
1. Accept wastewater from the Three Rivers Watershed for treatment on 118,000 acres of farmland in Northcentral Ohio;
 2. Accept the significant modification of the current local institutional framework, which is necessary to permit efficient operation of the multi-regional Wastewater Management System;
 3. Accept the modifications of crop patterns to those of fodder crops and external influence on farm management practice which is necessary for the efficient operation of the land "treatment area to treat wastewater and produce crops";
 4. Accept the significant modification of the current local institutional framework, which is necessary to permit efficient operation of the multi-regional wastewater management system;
 5. Accept the anxiety over potential uncoordinated losses^{2/} of urban and rural families in Northcentral Ohio who reside on the 14,000 acres of land that must be acquired in fee simple for aerated lagoons and winter storage basins;
 6. Accept the anxiety families and farmers over the potential for restricted community development resulting from commitment of lands for the land treatment of wastewater;
 7. Accept the potential for occasional odors from aerated lagoons;
 8. Accept the potential for increased flooding, reduced aquatic habitat and increased sediment transport to the tributaries of the Vermilion, Huron, and Sandusky Rivers which would result from the transport of water from the Three Rivers Watershed;
 9. Accept irrigation water at 75 inches per year, which is in excess of that quantity necessary for optimum crop production.
 10. Accept the transport of raw sewage after 1990 via tunnel from the Three Rivers Watershed Area to Northcentral Ohio.

^{1/} Assumes that the Federal taxpayers will finance 75% of the capital costs, and that the study area taxpayers will finance 25% of the capital costs, plus 100% of the operation and maintenance costs of any plan selected by the 50 years at 7% interest.

^{2/} Potential uncoordinated losses are generally considered to be any real or leased losses in excess of full market value of land and relocation assistance under the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

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TABLE 46
PREFERENCE SETS FOR CHOICE AMONG ALTERNATIVE PLANS BY THE RESIDENTS OF THE REST OF THE UNITED STATES¹

PREFERENCE SET 1	PREFERENCE SET 2	PREFERENCE SET 3	PREFERENCE SET 4	PREFERENCE SET 5
In Order to Choose Plan A to Level II over All Other Plans	In Order to Choose Plan B at Level II over All Other Plans	In Order to Choose Plan C at Level II over All Other Plans	In Order to Choose Plan D at Level II over All Other Plans	In Order to Choose Plan E at Level II over All Other Plans
A Resident of the State of the United States Not Prefer To:	A Resident of the State of the United States Not Prefer To:	A Resident of the State of the United States Not Prefer To:	A Resident of the State of the United States Not Prefer To:	A Resident of the State of the United States Not Prefer To:
<p>1. Allow the three River Watershed Areas to meet expanded State of the Water Quality Standard and conform to the International Agreement on Great Lakes Water Quality;</p> <p>2. Serve Federal taxpayers an average annual cost of \$24,500,000 (\$54,100,000 v. \$70,000,000) over the next four years per plan, and use the savings to meet some incremental plan, and use the savings to finance other state priority Federal problems; [if]</p> <p>3. Use Federal tax monies to finance wastewater treatment technologies which have greater potential to increase job opportunities; and</p> <p>4. Avoid a potential increase in Federal taxpayer farm subsidy payments due to increased agricultural production from crops grown on land treatment systems; and</p> <p>5. Employ waste treatment technologies which emphasize recycling of effluents derived from wastewater consistent with the provisions of PL 91-500.</p>	<p>1. Approach the water quality goals of PL 91-500, specifically the 1985 goal of elimination of discharge of pollutants;</p> <p>2. Implement waste treatment technologies which emphasize recycling of effluents derived from wastewater consistent with the provisions of PL 91-500;</p> <p>3. Use Federal taxpayer tax monies to finance wastewater treatment technologies consistent with the provisions of PL 91-500;</p> <p>4. Employ waste treatment technologies which emphasize recycling of effluents derived from wastewater consistent with the provisions of PL 91-500; and</p> <p>5. Minimize Federal taxpayer cost for a plan to approach the water quality goals of PL 91-500, average annual cost below \$70,000,000. [if]</p>	<p>1. Approach the water quality goals of PL 91-500, specifically the 1985 goal of elimination of discharge of pollutants;</p> <p>2. Preserve and maintain, through the wastewater management program, open space in and around metropolitan areas and urban sprawl;</p> <p>3. Employ waste treatment technologies which emphasize recycling of wastewater consistent with the provisions of PL 91-500; and</p> <p>4. Employ waste treatment technologies which emphasize recycling of effluents derived from wastewater consistent with the provisions of PL 91-500;</p>	<p>1. Approach the water quality goals of PL 91-500, specifically the 1985 goal of elimination of discharge of pollutants;</p> <p>2. Preserve and maintain, through the wastewater management program, open space in and around metropolitan areas and urban sprawl;</p> <p>3. Employ waste treatment technologies which emphasize recycling of wastewater consistent with the provisions of PL 91-500; and</p> <p>4. Employ waste treatment technologies which emphasize recycling of effluents derived from wastewater consistent with the provisions of PL 91-500;</p>	<p>1. Increase Federal taxpayer average annual cost over the next four years per plan which approaches the water quality goals of PL 91-500. [if]</p> <p>2. Incur a potential increase in Federal taxpayer farm subsidy payments due to increased agricultural production from crops grown on land treatment systems; and</p> <p>3. Believe that, or be indifferent as to whether payment of full market value of land and relocation assistance eliminates or minimizes potential uncovered losses borne by owners of system required lands; and [if]</p> <p>4. Use Federal tax monies to finance waste treatment technologies which have the potential--although to a somewhat lesser extent than do the other alternatives--to increase job opportunities.</p>
<p>And Be Willing To:</p> <p>1. Preserve the opportunity to approach the water quality goals of PL 91-500, specifically the 1985 goal of elimination of discharge of pollutants;</p> <p>2. Preserve the opportunity to preserve and maintain, through the wastewater management program, open space in and around metropolitan areas against urban sprawl (there are a variety of reasons why he may wish to do this including indifference and the existence of other Federal programs which he may believe to be better suited for this purpose); and</p> <p>3. Preserve the opportunity to employ waste treatment</p>	<p>1. Believe that, or be indifferent as to whether payment of full market value of land and relocation assistance eliminates or minimizes potential uncovered losses borne by owners of system required lands; and [if]</p> <p>2. Use Federal tax monies to finance waste treatment technologies which have the potential--although to a somewhat lesser extent than do the other alternatives--to increase job opportunities.</p>	<p>1. Believe that, or be indifferent as to whether payment of full market value of land and relocation assistance eliminates or minimizes potential uncovered losses borne by owners of system required lands; and [if]</p> <p>2. Use Federal tax monies to finance waste treatment technologies which have the potential--although to a somewhat lesser extent than do the other alternatives--to increase job opportunities.</p>	<p>1. Believe that, or be indifferent as to whether payment of full market value of land and relocation assistance eliminates or minimizes potential uncovered losses borne by owners of system required lands; and [if]</p> <p>2. Use Federal tax monies to finance waste treatment technologies which have the potential--although to a somewhat lesser extent than do the other alternatives--to increase job opportunities.</p>	<p>1. Believe that, or be indifferent as to whether payment of full market value of land and relocation assistance eliminates or minimizes potential uncovered losses borne by owners of system required lands; and [if]</p> <p>2. Use Federal tax monies to finance waste treatment technologies which have the potential--although to a somewhat lesser extent than do the other alternatives--to increase job opportunities.</p>

CONCLUSIONS

A. Introduction

The summaries of the impacts of the four alternative plans displayed in the preference sets in Chapter 8 provide the preliminary basis for choice among the alternatives by various members of the public. Those sets include consideration of the public response to the components of the twelve alternatives. Additional impacts will probably be identified in the public review of the four alternative plans. The final report will include those impacts and others identified by the State of Ohio in their review.

The preference sets provide data from which a number of conclusions can be drawn concerning future decisions. These conclusions are outlined in the following paragraphs. To insure that other principal characteristics of the four plans and their components are easily identified, they are highlighted in this concluding chapter.

B. Flexibility

These plans provide sufficient flexibility to allow for advances in technology and public attitudes. Plan A-I provides a direct comparison with Plan A-II for the decision between levels of treatment to be achieved in the future. In addition, Plan A-I provides the basis for implementation of a wastewater management system that achieves Level I, but can be modified to achieve Level II without

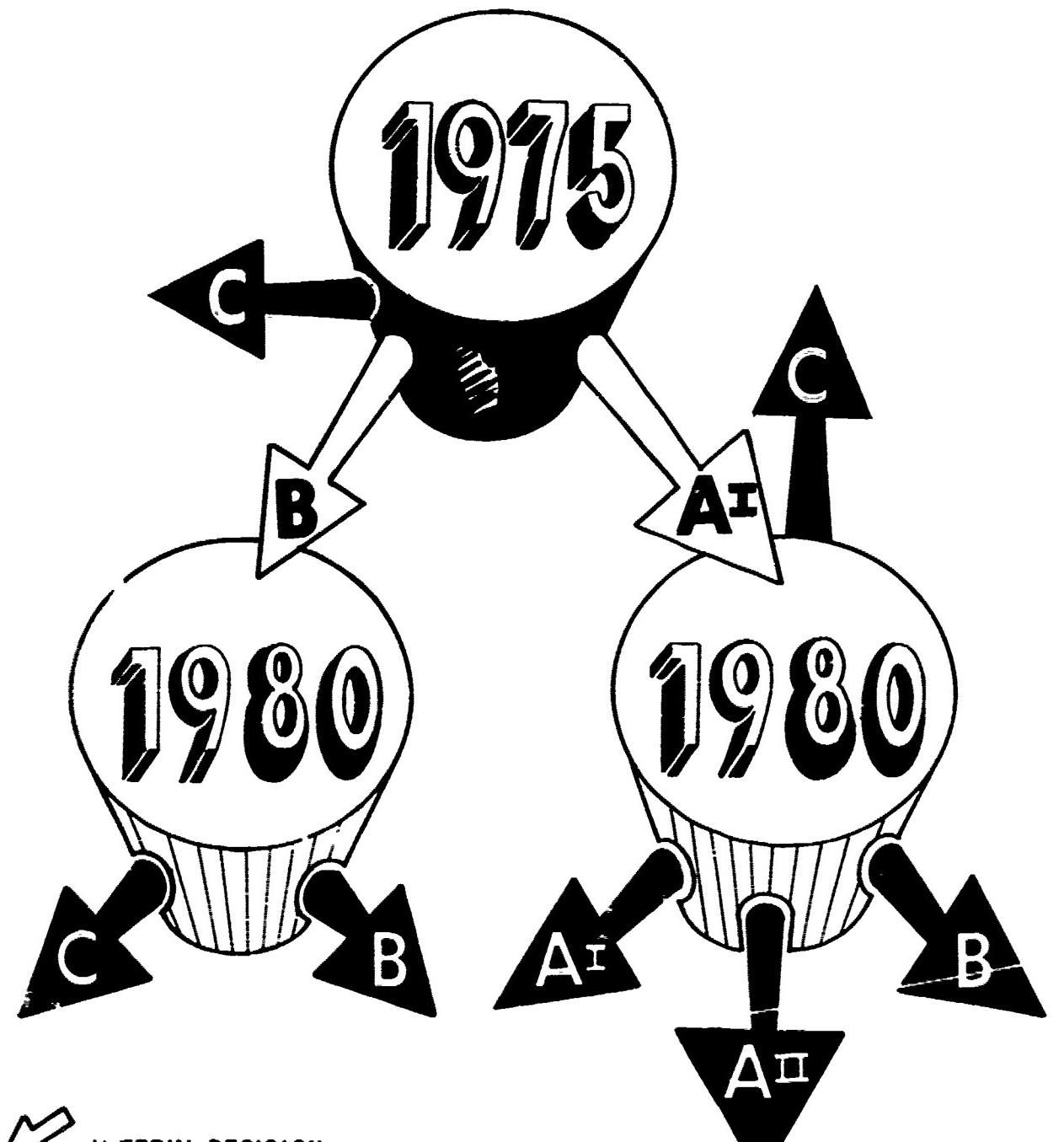
loss of the investment to achieve the former level.

In order to continuously progress toward the objectives established by PL 92-500, choices among the plans must be made by specific dates. Those critical dates for decisions are shown pictorially in Figure 31.

Public Law 92-500 requires the achievement of secondary treatment at all locations by 1977. In order to complete construction of any required secondary treatment facilities by that date, a choice among plans must be made no later than 1975. The choice of secondary treatment by aerated lagoons prior to land treatment to reduce costs in the upper portion of the Watershed dictates the interim selection of Plan B or selection of Plan C. The decision to continue secondary treatment within the Watershed by activated sludge or physical-chemical treatment dictates the interim selection of Plan A-I. Selection of Plan A-II in 1975 is not necessary since Plan A-I is an intermediate stage of Plan A-II.

If the 1975 choice is early implementation of Plan C, that decision is final for both configuration and level of treatment, with the exception of those components utilizing advanced biological or physical-chemical treatment, which can be retained at Level I. Those components can be upgraded to Level II by a decision in 1980 in accordance with the 1985 goal of PL 92-500. Early implementation of Plan C using aerated lagoons would possibly provide Level II treatment at less cost than Level I can be achieved

DECISIONS



INTERIM DECISION



FINAL DECISION

by Plan A-I.

If it is decided that Level I is adequate, Plan A-I, or Plan B, with Level I treatment in the advanced biological and physical-chemical treatment facilities, provide that capability.

If it is decided that Level II is to be achieved, the selection among plans must be made no later than 1980 to allow completion of construction by 1985. This is especially applicable to Plan C to allow completion of the deep tunnel prior to 1985. With Plan B as the 1975 choice, the decision in 1980 lies between the continuation of Plan B or the evolution from Plan B to Plan C. With Plan A-I as the 1975 choice, the selection lies among direct upgrading to Plan A-II or evolution to Plan B or Plan C with activated sludge or physical-chemical treatment preceding land treatment within the Watershed.

If Plan C is the 1980 choice, aerated lagoon secondary treatment in North Central Ohio will maximize cost effectiveness; however, secondary treatment within the Three Rivers Watershed prior to transport may be continued at an increased plan cost.

C. Industrial Treatment

Industrial wastewater treatment by Option 3, which includes sufficient pretreatment to insure compatibility with any technology, is incorporated into all four alternative plans. However, if the

E. Sludge Management

In order to conform to the current planning of the local officials, the phasing of all four plans includes incineration of sludge in Cleveland through 1990. A program is currently underway to upgrade the existing incinerator facilities there. The State must forego this plan if strip-mine application is the preferred option. The decision must be made now to save the cost of renovation of incinerators and apply those monies to the strip-mine restoration program. Further, in order to decide upon the restoration program, the State must obtain the rights-of-way and upgrade the pipeline between Cleveland and Harrison County and initiate institutional means of using the strip-mined lands.

F. Resource Requirements

The energy and chemical requirements for any of the four plans are increased over current consumption. This is also true of manpower needs to adequately operate the systems.

G. Incidental Benefits

Many incidental benefits are derived from each of the alternative plans. They include:

1. The value of crops grown on land treatment areas in Plan C at 2020 wastewater loads is approximately \$36 million annually (in terms of 1972 dollars).
2. A potential capital contribution from private industry in Plan C for a power plant site adjacent to the winter storage basin is estimated at \$30 million.

practicability of extracting heavy metals by the soils without detriment to the soils, crops, or consumers is substantiated, Option 4 may be used in conjunction with the land treatment components of Plans B or C.

Option 2, which incorporates maximum industrial recycle, is compatible with any technology, and provides a substantial savings of wastewater treatment costs to the industries.

The final choice of industrial wastewater treatment option should be a cooperative decision of local officials and the industries.

D. Urban Stormwater Runoff.

Stormwater is collected and treated in quantities sufficient to accommodate 97.3 percent of the total average annual urban stormwater runoff. Collecting and treating 99 percent would increase the cost by 30 percent while improving effectiveness by only 2 percent.

The decision to treat stormwater to Level I or to Level II is critical to the plan selection decisions. If Plan C is selected in 1975, Level II treatment is more cost effective, since land treatment accomplishes Level II treatment. If any other plan is chosen in 1975, the decision as to Level II treatment of stormwater can be made in 1980 along with the selection among the plans. This allows time to monitor stream quality resulting from Level I treatment. If it is decided Level I treatment of stormwater is adequate, significant savings can be achieved. This conclusion can affect the choice of plans in 1980.

3. All four plans provide flood control benefits in the Three Rivers Watershed area from the storage of stormwater for treatment, but potential cost savings have not be estimated.

4. The value of the strip-mined land in Southeastern Ohio will increase as a result of restoration and revegetation through the application of sludge in Plans A-I, A-II, and B. This increase has not been estimated.

H Access to Lands for Treatment

Access to land necessary for the land treatment technology may be accomplished by several methods, including purchase, lease, easement and cooperative agreements. Of these options, purchase is the least desirable. For example, if the land identified in Plan C were purchased by local or State government, \$1.1 million annually would be removed from tax payments in the North Central Ohio counties concerned. Some other option is preferred. Management techniques should be worked out to allow the farmer and sanitary engineer to use the same land. If changes in farm management are necessary to allow cooperative use of the land, appropriate management techniques should be developed cooperatively.

I. Institutional Aspects

The systems configured in Plans A-I, A-II, and Plan B can be managed by an existing governmental entity such as the Three Rivers Watershed District since the total system is within the basin. The District could be given the necessary authority and responsibility to either

monitor the compliance with the overall plan, with execution by local government, or be given total responsibility for execution.

Plan C presents a very difficult institutional problem since the configuration of the system defined by that plan encompasses many counties and many watersheds. This plan would call for State control or a special governmental agency to operate it.

J. Implementation

Recognizing the limited full scale experience with any technologies considered for treatment to Level II criteria, early construction of local facilities would be advantageous for public acceptability and proper design.

One principal public concern related to any of the three technologies centers around the proper operation and maintenance of wastewater treatment facilities to assure achievement of design performance. Other public expressions of public concern include 1) air pollution from sludge incinerators, 2) chemical requirements of physical-chemical facilities, 3) power requirements of all advanced treatment technologies, 4) the environmental impacts from the possible failure of large facilities, 5) inhibition of biological processes by toxic inputs, and 6) the requirement for a large number of very highly trained operating personnel.

If projects are constructed prior to 1975, they can be monitored to obtain verification of the design criteria as well as measurement of the benefits achieved. This would insure that well-informed decisions are made at those critical dates previously identified and

that the public concerns and engineering problems can be resolved in the design stage.

Early implementation and construction of components of the various plans would provide experience necessary for the decisions that must eventually be made by State and local officials in Ohio in choosing from among the alternative plans and/or their components. Based on the public response from the workshops and public meetings and the planning needs of the Ohio Environmental Protection Agency, as documented in Attachment C, it can be concluded that the following types of programs are desired and needed:

1. Urban Stormwater Runoff Treatment

a. Treatment of runoff from a separately-sewered, densely-populated area of mixed residential and commercial development. Concrete basin storage would be provided with capacity optimized for combined treatment in municipal plants. Influent, effluent, rainfall, and runoff should be monitored.

b. Treatment of runoff from a separately-sewered, moderately-populated area not in a metropolitan urban environment (a suburban residential area such as a smaller outlying city in rural surroundings). Earthen basin storage would be provided with treatment capacity to empty the basin within 30 days. Quantity and quality monitoring should be performed.

c. Land treatment of runoff from a typical downtown urban area with ultimate treatment being provided at an urban park or other type of open space.

d. Land treatment of runoff from a typical outlying residential area, with ultimate treatment being provided in parks, golf courses,

or easily accessible agricultural lands.

2. Advanced Municipal Wastewater Treatment Plants.

a. Physical-chemical treatment at a small plant with Level II capability.

b. Advanced biological treatment at a plant with Level I and Level II capability.

c. Land treatment at an in-basin site using the overland flow/infiltration method, at an in-basin site using spray irrigation, and at a site in the western land treatment area using spray irrigation with various land management techniques.

3. Storm Runoff Reduction by Urban Drainage Management.

Provide storm drains, on-site storage, parking-lot storage, roof-top storage, and other means of reducing the volume of storm runoff by various management methods.

4. Sludge Handling.

Show various ways to handle sludge, by application to agricultural land, strip mine land, and sanitary landfill, while monitoring leachate and surface runoff for various critical parameters. This project should not be implemented merely to dispose of sludges, but more importantly to accomplish restoration of unproductive land.

5. Water Monitoring System.

A water quality and flow monitoring system for the entire Three Rivers Basin Study Area. This system would measure the quality and quantity of the waters in the Three Rivers Watershed and allow monitoring of the effects of any treatment methods proposed. A similar monitoring system should be developed for water courses adjacent to

land treatment sites outside the Three Rivers Watershed.

More detailed discussion of these early implementation programs is contained in Appendices III and V. Some of the public desires concerning the types of programs are expressed in correspondence attached in Appendix VIII.

The execution of any plan or component thereof should be left to the decision of State and local governments and the public at large. The early implementation features identified above, or of any projects undertaken, should be fully coordinated with appropriate local, State, and Federal agencies.

In addition to these early implementation and construction features, other conclusions resulting from this study effort are that a prerequisite of public involvement in wastewater treatment planning is education of the public in regard to treatment technologies, costs, and environmental effects and basin-wide management plans should consider the results of this planning effort, the Northeast Ohio Water Development Plan, and other plans prepared by local, regional, State or Federal agencies for comprehensive water resource management.

Although local governments and the citizens of North Central Ohio have expressed opposition to Plan C, they have not excluded the land treatment technology from consideration for treating their own wastewater. The principal reasons for their opposition are the non-acceptance of effluent created in other basins or regions, the concern over changing farm methods and the design of a single massive land

treatment area. The first concern cannot be eliminated without demonstrating benefits from acceptance of the effluent to offset any problems created. The other ~~concerns~~ can be eliminated by reducing the application rates sufficiently to allow current farming practices and crop patterns to continue, and further, to design the land treatment system to use numerous dispersed sites rather than the one large area. These changes in Plan C would increase the cost of that plan to the extent that it would not remain the least cost Level II plan, unless it is implemented by 1975. The environmental and social benefits resulting from these changes may well be worth the added dollar cost. These concerns are the subject of a current study by the Ohio Agricultural Research and Development Center of Ohio State University. That study will be published as an appendix to the final report and the results incorporated into the summary report.

K. Assumptions and Projections

The assumptions and projections of data included in any planning study must be carefully monitored as the future unfolds. Changes in either the assumptions or projections will change portions of the plans. This is the major reason for providing a multiple means approach and for retaining flexibility for the decision process relating to wastewater management in the Three Rivers Watershed area.

ATTACHMENT 11

**REPRESENTATIVE NEWSPAPER ARTICLES
RESULTING FROM
FINAL PUBLIC MEETINGS**

AKRON, OH, BEACON JOURNAL - 5 Jun 73

Debate On Sewage Spraying Slated

RICHFIELD — The public will have its last say Thursday on an Army Corps of Engineers plan to spray sewage on agricultural land.

The Army plan three years in the making, will be debated at 7:30 p. m. Thursday at the Richfield Holiday Inn at Turnpike interchange 11.

After the public meeting, the Engineers Corps will draw up its final recommendations for possible implementation by the Ohio Environmental Protection Agency.

THE THREE-YEAR study sought a means of disposing sewage from the Chagrin, Cuyahoga and Rocky river basins. It comprises biological and chemical treatment of the sewage, but urges spraying the sewage on farm land as the cheapest way of getting rid of it.

Copies of the Army's draft report are available at the Summit, Portage and Medina

county clerks' offices. It shows soils most suitable for the spraying lie along the Cuyahoga River in Portage and Summit counties.

Sewage to be sprayed as fertilizer on farm land would first pass through existing treatment plants. But the spraying would eliminate the need for expensive third-stage treatment plants now required by EPA standards. Cities have said they'll be hard-pressed to pay the cost.

AN ALTERNATIVE Army plan is to pump the Akron and Cleveland area sewage through a huge tunnel to a 70-square-mile area around Willard, O., for spraying on the land. Willard area residents will get their say about the plan at 7:30 p. m. Wednesday at Willard High School.

A second alternative is to pump the sewage to strip-mined areas in Harrison and Jefferson counties for spraying, an aid to reclaiming the land.

All of the plans are based on the need to stop dumping untreated sewage into Lake Erie and the rivers which feed it.

CORPS OF ENGINEERS

BUFFALO DISTRICT

ELYRIA, OH, CHRONICLE TELEGRAM - 7 Jun 73

Army says piping waste is publicly unacceptable

By SHANNON EUBANKS

WILLARD — If the Army Corps of Engineers had any doubts about the acceptance of its proposed piping of Cleveland-Akron area wastewater to a site near here, they were wiped out last night.

While 25 speakers, including State Sen. Gene Slagle, D-Galion and State Rep. Gene Damschroder, R-Fremont, voiced their opposition at the three-hour meeting, the more than 300 in the audience applauded.

COL. ROBERT Moore of the Army Corps then told the group, "There are other solutions. That's how I see it. It (Plan C) will go into our records as publicly unacceptable."

Plan C calls for storm and sewage water being piped in a 10-foot wide underground tunnel from the Cleveland-Akron area to a 183-square mile treatment site within Huron, Seneca, Crawford and Richland counties.

THE WASTE would then be stored in a large acrated lagoon and sprayed on surrounding farmland at the rate of two inches a week.

Cost of this plan, one of four being considered by the Army Corps, has been estimated at \$1.4 billion to construct and \$233 million per year to operate.

A spokesman for the Ohio Environmental Protection Agency read a statement last night from that agency's director Ira L. Whitman, giving the first indication of the state's reaction to the plan.

Whitman stated that Plan C would not be considered by the state (for implementation) until residents of both the Three-

River watershed district (Rocky River, Chagrin and Cuyahoga Rivers) and in the land treatment site request the state to do so.

AMONG THOSE speaking against the plan were representatives of Ohio and county farm bureaus, various township trustees, Mansfield Area Chamber of Commerce and farmers from Seneca, Sandusky, Huron, Crawford and Richland counties.

The main objections were over changing farming methods as well as switching to different crops. One farmer asked the crowd, "How am I going to farm with all the water God blessed me with and the fifty inches Cleveland blessed me with?"

Norman H. Smith, public affairs chairman for the Huron County Farm Bureau, pointed out, as did other speakers, he was not against land treatment as a method of disposing of waste.

"**HOWEVER**, I do think that more study needs to be done as to the effects of land treatment before even a local community considers it."

Col. Moore said a team from Ohio State University was now working on a study of the agricultural impact of the corps' proposal.

He noted their report would be incorporated into his final draft.

The state will then review the Army Corps' plans and findings and act on any implementation.

Col. Moore did not expect to have his final report ready until this fall.

U.S. CORPS OF ENGINEERS

BUFFALO DISTRICT

THE TIMES LEADER MARTINS FERRY, O- 9 JUN 73

Harrison Countians Hear Sludge Proposals

ONE
**Army Engineer Specifically
Defines 'Sludge'**

CADIZ — "First off, it is not sewage or solid wastes. It is treated sludge."

That "major difference in what we're talking about" was one of the remarks Friday of Col. Robert Moore, U.S. Army Corps of Engineers, Buffalo, N.Y. district, who led the final public hearing at Cadiz on a plan that could see transport to Harrison County of sludge from the Cleveland - Akron areas.

Col. Moore outlined the Corps' four draft proposals for wastewater management for the Three Rivers Watershed Areas near Cleveland and Akron. Two of those preliminary proposals suggest transport of "sludge" to Harrison County for placement on and restoration of strip mined land.

"We should not use the word 'disposal,'" emphasized Col. Moore. "We are talking about USE of an organic substance rich in nutrients."

He made that statement because a great deal of "confusion" seems to exist over just what "sludge" is. The difficulty arises, he explained, because there are several pending solid waste proposals for Harrison County unrelated to the Corps of Engineer studies.

"Sludge is an organic material rich in nutrients. It could be used to break down the cement-like surfaces of strip mined land, to make the land permeable and re-establish a highly productive soil. That," he said, "is what this plan is all about. Cleveland will have the material. Harrison County could use it."

He explained that sludge is a sand-like material which remains after a 28-day process which treats and washes, as well as purifies, sewage. The Corps proposes in two of its four studies for the Cleveland area that sludge be pipe-lined to Harrison County and dispersed over strip mined land to "restore the land by breaking up the soil, so it can support growth." The sludge would be about 97 per cent water — "the water used to clean the sewage; not sewage water," he stressed — and about three per cent actual organic material.

"We propose that the existing pipeline between Cadiz and Cleveland, now operated by the U.S. Coal Co., to transport coal slurry, be used to transport sludge from Cleveland to Harrison County," said Col. Moore. "A decision on this proposal must be made as soon as possible," he added, "for two factors...Cleveland

Page / of 3

F ENGINEERS

BUFFALO DISTRICT

THE TIMES LEADER MARTINS FERRY, O - 9 JUN 73

plans to either use this plan or build new incinerators to burn its sludge; and the option on the pipeline runs out in just a year and a half."

The proposals "do not at all" involve any solid wastes, said Col. Moore, although he did mention that use of solid wastes from other areas to fill the county's many strip pits "would blend beautifully with this sludge proposal."

As it is, the sludge would be sprayed over strip mined land, in up to two inch applications. The 97-per-cent water solution would percolate down through the organic material "and break up the crusty strip mine surface," said Col. Moore. While the water would break up the hard lands, the organic material would remain on the surface and re-establish "excellent top soil rich in nutrients."

Purpose of the hearing Friday was to receive comments from citizens and officials which "will be incorporated into our final report," the engineer explained. The Corps' final report will be reviewed by higher Corps officials, sent to Congress for approval

and then given to the state of Ohio and local governments for possible implementation.

"We have nothing at all to do with implementation. We have studied all possible engineering proposals for wastewater management for Cleveland. Our proposals can be used by Ohio if it so chooses," noted Col. Moore.

It seems that Ohio may do just that, if the plan is approved by Harrison County residents.

"Generally, public sentiment seems to be very much in favor of the plan," said Uwe Seeler of the Ohio Department of Natural Resources. The Ohio Environmental Protection Agency (EPA), and the Natural Resources department, Friday issued a joint statement lauding the Corps study, calling for "a first year trial of sludge disposal in Harrison County... based upon local acceptance."

Seeler added that a \$50,000 study grant is being sought from the Appalachian Regional Commission to fund a study about the "feasibility" of the Corps proposal.

"The study would determine if the proposal is safe; how much sludge could be used, and how it would get from Cleveland to Harrison County." In addition to the pipeline proposal, truck and unit-trail transport methods need to be studied, he said.

The proposed study — needed before the Corps plan can be implemented — would be in three parts — "Determine feasibility (that is safety) of the plan, determine what has to be done to make it work, set up demonstrations for a trial run," said Seeler. He stressed, "from start to end, research will be constant and there will be a committee of local residents overseeing everything. Anytime they think the plan isn't safe, it will be stopped by the Department of Natural Resources."

Seeler said "no decision has or can be reached on when the proposed study would be completed." It is hoped that it could be within 18 months, before Cleveland needs new incinerators and the pipeline option expires.

7 3 pages

U.S. OF ENGINEERS.

BUFFALO DISTRICT

THE TIMEW LEADER MARTINS FERRY, O- 9 JUN 73

Commenting on the Corps study Friday were Harrison residents Boyd Wallace, a farmer, and Floyd Lamb, Harrisville, a self-employed well driller.

Wallace said he visited a similar project in St. Mary's, Pa., and said Harrison County would be far ahead if the material is used, with proper safeguards." He said the sludge "does not smell nearly as objectionally as manure a farmer hauls to his farmyard," and he "had not heard of any water damage" in the St. Mary's project. Lamb voiced concerns that the sludge water would seep to water levels via existing oil and coal core drillings, "eventually get into ground waters and do irreparable damage."

A Columbus civil engineer, Dr. John Norbell, who came to the bearing on his own, leveled a blast of "righteous indignation" against Lamb's contentions, and also voiced personal slams against former coal officials in the county.

The latter remarks prompted Harrison County Commission Dwain Smith to face off with Norbell, charging him with doing nothing more than "saying there's nothing good about Harrison County. I'm tired of outsiders coming here and saying that." He suggested that because Norbell came uninvited, the man take himself to Jackson County — which has requested use of the Corps' study — and "stay there."

ATTACHMENT 12

TRANSCRIPTS
OF
FINAL PUBLIC MEETINGS

1 DEPARTMENT OF THE ARMY
2 Buffalo District, Corps of Engineers
3 1776 Niagara Street
4 Buffalo, New York 14207

5 PUBLIC MEETING

6 ON THE

7 WASTEWATER MANAGEMENT STUDY

8 FOR CLEVELAND-AKRON

9 METROPOLITAN THREE RIVERS

10 WATERSHED AREAS

11 Held at Punderson State Park

12 Elizabethan Room

13 Off of Route 87

14 Newbury, Ohio

15 on

16 5 June 1973

17 at

18 7:30 p.m.

19

20

21

22

23

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2

DEPARTMENT OF THE ARMY
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

PUBLIC MEETING

ON THE

WASTEWATER MANAGEMENT STUDY

FOR CLEVELAND-AKRON

METROPOLITAN THREE RIVERS

WATERSHED AREAS

Held at Punderson State Park

Elizabethan Room

Off of Route 87

Newbury, Ohio

Newbury, Ohio

on

5 June 1973

ات

7:30 p.m.

PRESENT:

**COLONEL ROBERT L. MOORE, District Engineer, U. S. Army
Engineer District, Buffalo, NY 14207**

21 MAJOR GENERAL ERNEST GRAVES, JR., U. S. Army Corps of Engineers, North Central Division, Chicago, Ill.

DR. IRA WHITMAN, Ohio Environmental Protection Agency,
Columbus, Ohio

- 1
2 JIM SCHAFER, Department of Natural Resources, Fountain
3 Square, Columbus, Ohio
4
5 VALDAS ADAMKUS, Deputy Regional Administrator, Region 5,
6 Chicago, Illinois
7
8 BECKER, MIMI, Box 735, Hiram, Ohio,
9 Land Use Chairman
10
11 BOYDELL, A. KENNETH, 231 South Chestnut St., Ravenna, Ohio,
12 Portage County Sanitary Engineer
13
14 BREKEY, MRS. DAVID, 38965 Gardenside
15 Housewife
16
17 BROWN, CHARLES N., 296 Cambridge Dr., Aurora, Ohio
18 Service Director
19
20 CARLTON, WILLIS, 3486 Pioneer Trail, Mantua, Ohio
21 Private Individual
22
23 CARSON, JOHN H., JR., Court House, Ravenna, Ohio
24 Commissioner
25
26 CHASE, MRS. RICHARD, 5731 Caranor Drive, Kent, Ohio 44240
27 Private Individual
28
29 COOL, WILLIAM S., P. O. Box 275
30 Professor of Biology, Hiram College
31
32 COWDEN, JAMES W., Kent State
33 Private Individual
34
35 CRAIG, DONALD W., 3691 Pioneer Trail, Mantua, Ohio
36 Private Individual
37
38 DeREMER, CRAIG
39 Private Individual
40
41 DERICKSON, GENE, Fountain Square, Columbus, Ohio
42 Ohio Soil and Water Districts
43
44 DODDS, ELEANOR J., 38 Pinehurst Drive, Eastlake, Ohio
45 Private Individual
46
47 DOYLE, JOHN A., 1930 Fountain Square, Columbus, Ohio
48 Environmental Assessment Coord. - State of Ohio 1st Pilot

1
2 EATON, GRANT, 14894 Munn Road, Newbury, Ohio
3 Private Individual

4 FERRIS, DUANE F., Box 126, Bunton, Ohio
5 Teacher, Naturalist

6 GARMUS, DAN, 425 N. Hombden St.,
7 Environmental Health - Chief

8 GENSERT, CARROL, 16 Bellview St., Chagrin Falls, Ohio
9 Librarian, Case Western Reserve

10 GILMER, DAVID, 105 Main Street, Painesville, Ohio
11 Director, Lake Co. Planning Com.

12 GORDON, MYRA P., 8008 Chagrin Road, Chagrin Falls, Ohio 44022
13 Private Individual

14 GRYSHO, ANGIE, 14739 Beechwood Drive
15 Supt. O.D.O.T.

16 HACKNEY, P. A., 1030-C Galliton Ct., Columbus, Ohio
17 Professor, Ohio State University

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11 of Natural Resources

12 USHER, JOSEPH E., Box 542, Middlefield, Ohio 44062
13 Village Supt. - Water, Sewer & Streets

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(INDEX OF SPEAKERS)
(In Order of Appearance)

	<u>NAME</u>	<u>ORGANIZATION</u>
1	Colonel Robert L. Moore	Coprs of Engineers
2	Unidentified Man #1	Private Individual
3	Mr. Leonard Schnell	President of the Ohio Farm Bureau
4	Mimi Becker	Land Use Chairman
5	Bill Sellers	Chief of Planning in Ohio EPA
6	Unidentified Man #2	Private Individual
7	Mrs. Henrik Kylin	Chairman of Central Area Committee of Lake Erie Basin Committee
8	Unidentified Man # 3	Private Individual
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Prepared Speech by Colonel
Moore

2

Statement by Mrs. Kylin

3

Letter from Earthview, Inc.

1
2 PROCEEDINGS
3

4 COLONEL MOORE:
5

6 It is going to get kind of warm in here, so I think
7 we'll go ahead and proceed.
8

9 It is a pleasure to return to the Three Rivers Watershed
10 area to present the final series of public hearings in the
11 planning process being accomplished by the Corps of
12 Engineers for the State of Ohio to develop logical and
13 acceptable concepts for waste water management for the area
14 depicted on this slide.
15

16 I want to express my personal appreciation for the
17 State of Ohio co-chairing these final presentations, and
18 there will be four of them. This is the first. I par-
19 ticularly desire to thank the people at the head table for
20 sharing this evening with me.
21

22 They are Dr. Whitman, doctor of the Ohio EPA, General
23 Graves, my boss, division engineer of the North Central
24 Division, Corps of Engineers, Mr. Jim Schafer, deputy to
25 Mr. Bill Nye, who was supposed to be here, the Director of
26 Natural Resources. . He had a commitment, and Jim is pinch-
27 hitting here, and there is Mr. Adamkus from Federal EPA, who
28 sits over at the extreme side of the table on my right.
29

30 Before I forget it, there are some other personnel in
31

1
2 the state who have greatly contributed to this effort
3 tonight and would be remiss if I didn't mention them.

4 They are, again, Mr. Jim Schafer, who has worked very
5 closely with the entire study effort. There is Mr. Bill
6 Sellers, the chief of the planning division, Ohio EPA, who
7 came late into this study, but he has helped considerably
8 in the final model of this effort. There is Mr. Art
9 Woldorf, who has been with the study the entire time and
10 contributed immeasurably to the effort, and, finally, last
11 but not least, there is Mr. George Watkins, secretary-
12 treasurer of the Three Rivers Watershed District, who has
13 been in the study effort, in the planning process and the
14 whole spectrum of the events throughout the study process.

15 We wish also to thank you, the public, who have
16 provided the most to this effort through your constant
17 contact with the study and provision of worth-while
18 information, which as will be seen, has greatly influenced
19 the results.

20 (Reads Exhibit 1)

21 Insert between slides 21 and 22 -- you get that by
22 comparing Plan AI and Plan AII. Yes, sir?

23 UNIDENTIFIED MAN #1:

24 I have a question. By only costs, what do you mean,

1
2 operating costs?

3 COLONEL MOORE:

4 That's the investment cost and the operating costs
5 strung out over a fifty-year period. It is not that easy.
6 It is done on an economic analysis basis, but generally,
7 that's the scheme. It is the total cost of the system
8 spread over a fifty-year period, but it is done on an
9 economic basis.

10 (Continues to read Exhibit 1)

11 Insert during slide 23, paragraph 2 -- This must be
12 dependent upon the desires and goals established in the
13 Clean Water Act Amendment for 1972.

14 (Continues reading Exhibit 1, slide 23)

15 Ladies and Gentlemen, that concludes my formal
16 remarks. I thank you for your very kind attention, and I
17 would like to turn the podium over to Dr. Ira Whitman.

18 DR. IRA WHITMAN:

19 Thank you very much, Colonel Moore, for the film.
20 presentation and for the efforts the Corps of Engineers
21 has made in this study. Before going into my prepared
22 remarks, I would like to explain that the reason that the
23 State of Ohio has agreed to share these public meetings is
24 to have the public understand the relationship between the

1 : Corps and the State of Ohio in this study and that we have
2 : cooperated with the Corps which they have performed for us,
3 : for the people of the State of Ohio, this service by looking
4 : at some detailed complex alternatives, which is a serious
5 : problem in managing our waste water over the next fifty
6 : years in northern Ohio.

7 : We have not throughout any part of the study endorsed
8 : any one of the particular plans, nor have we indicated that
9 : we had a preference for a direction of the Corps to go,
10 : except approximately six months to narrow down some of the
11 : alternatives to the final four plans which they have
12 : produced. We will be in a position to review and make a
13 : final selection or final recommendation on which direction
14 : these efforts should go and what plan is open that we
15 : recommend to the Corps of Engineers and recommend for our
16 : adoption and pursuit. But we want the public to understand
17 : very clearly the role and the cooperative attitude of the
18 : State of Ohio in this study without endorsing any of the
19 : particular concepts.

20 : The Ohio Department of Natural Resources and the Ohio
21 : Environmental Protection Agency have cooperatively evaluated
22 : the concepts proposed in this important report. My state-
23 : ment is intended to represent the joint conclusion of both

1 2 departments.

3 4 In viewing the waste water study in its entirety, we
5 feel it is an unusually useful and well-prepared report.

6 7 We will make immediate use of the information and conclusions
8 presented during the perpetual updating and involvement of
9 required basin and metropolitan water quality plans and in
the formulation of sorely-needed strip mine reclamation
plans in the State of Ohio.

10 11 Let me assure both the Corps and the Congress that this
study will not be placed on the shelf and forgotten. The
12 13 relevance and usefulness of the report was greatly enhanced
by the truly outstanding efforts by Colonel Moore and his
14 15 staff to work in a close and sincere partnership with
counterpart planners in state government. We thank Colonel
16 17 Moore for this dynamic relationship and urge that other
Corps districts and federal agencies emulate his example.

18 19 I would like to say strictly on a professional level,
having been involved in planning and water resources planning
20 21 for a dozen years or so, that this is the finest example of
cooperation between professional planners at different levels
22 23 of government that I have seen, and I think it is a credit
to the Buffalo District who have taken on this study.

24 25 Despite my enthusiasm, however, it should not be assumed

that we feel that all the relevant water quality questions have been answered or that the wastewater management plan can, in itself be certified as a basin quality plan. This was beyond the intent of the funding capability of the Corps, and we fully understand that fact.

In reviewing any waste water management plan, and especially one of this magnitude and importance, the Ohio EPA must be constantly aware of the plan's relationship to Public Law 92-500, passed October, 1972, and to our national problems of energy resources.

This plan considers both of these factors in making its final recommendations. The policy of the State of Ohio is to pursue the goal of Public Law 92-500, that is, the elimination of the discharge of pollutants to the navigable waters in 1985, by making optimum use of all the resources available to us.

The plan proposes four alternative strategies for waste water management and requests that the state make the final plan recommendation. This is consistent with water quality planning requirements of the U. S. EPA and with desires of the state. The State of Ohio will consider alternatives A, AII, and B for recommendations after receiving comments from the public and consultations with the U. S. EPA.

At this time the state will not consider alternative C, that of the transport of water for land treatment in North Central Ohio as one of the viable alternatives unless the public in the three rivers watershed area and the North Central area request the state to consider it among the alternatives.

We are all aware that the most widely discussed aspects of the waste water management study are its proposals for land disposal of treated sewage. There is nothing new, of course, in this concept. Spray disposal or broad irrigation of various industrial wastes has been practiced for many years in Ohio with reasonable success.

After reviewing the court's study, I believe I would have very little hesitation in reviewing proposals for land disposal of adequately treated wastes from communities of less than 100,000 population in the same way I would review any other waste treatment plant design. It should be noted that a community of 100,000 would require less than 400 acres for land disposal of wastes.

Every plant design must pass rigid examination by Ohio EPA for effectiveness, cost, safety, and operability.

It is true, however, that there is a significant difference between land disposal of industrial wastes on small fields

1 2 owned by the industry and land disposal of sanitary wastes on
2 3 larger land areas. We would be interested in seeing this
3 4 concept utilized by one or more communities or less than
4 5 100,000 population both in the Sandusky watershed and the
5 6 three rivers watershed.

7 8 We would be particularly interested in innovative attempts
8 9 to make positive economic utilization of the liquids being
9 10 disposed of for improved agricultural returns. Special and
10 11 detailed quality monitoring of the run-off, the soil, and
11 12 the crops produced would be required. We are concerned about
12 13 land disposal over large areas, where institutional and
13 14 political problems would out-weigh technical considerations.
14 15 And, transfers of water from basin to basin need to be
15 16 subjected to particularly harsh scrutiny for hydrologic and
16 17 social reasons alike.

17 18 Depositing sludge on land areas as a means of disposal
18 19 is generally worth-while, and this may be especially true
19 20 for strip mined areas in Ohio where sludge may also aid in
20 21 their restoration. The State of Ohio wishes to give support
21 22 to proposals utilizing sludges for strip mined land
22 23 reclamation and proposes that a first year trial of sludge
23 24 disposal in Harrison County be pursued based upon local
24 25 acceptance.

The Ohio EPA in consultation with interested parties will designate a committee including ourselves, the Department of Natural Resources, the Cleveland Regional Sewer District, Harrison County, Coshocton County, Ohio State University, and Case Western Reserve to study the transfer of Cleveland sewage to strip mined areas and submit these recommendations to the state within 60 to 90 days.

As was pointed out, some immediate decisions have to be made in this area of sludge disposal.

I will ask the committee to study the proposal to transfer Cleveland's sewage by truck for one year to strip mined areas. Ohio EPA will request the U. S. EPA to prepare environmental assessments for this project.

As we view water quality and resource planning needs in Northern Ohio, I feel that a vital area thus far has been committed, that is, the potential impact on Lake Erie of these and other water management alternatives. There is an urgent need for a comprehensive Lake Erie water quality management plan. Lake Erie is the recipient of the run-off and the wastes and the sediments from one of the most complex urban and industrial agricultural areas in the world, yet we possess only a very limited knowledge of the dynamics of this vast body of water.

To meet this need, we urge that Section 108 of Public Law 92-500 be immediately funded in the full amount authorized and that the study be conducted by the U. S. Army Corps of Engineers in a realistic partnership with Canada and the States of Ohio, Michigan, Pennsylvania and New York. Ohio stands ready and eager to participate in this study as it does in many other interstate and international efforts toward restoring water quality in the lake and Great Lakes.

In conclusion, I again wish to thank the Corps for this useful report. I would also urge members of the public and their governmental agencies at all levels to communicate with us regarding the foregoing concepts. If we are to meet the high environmental goals set by the public, we must work together to utilize every available scientific technique. We look forward to a long and continued working relationship between the people of Ohio and the outstanding staff of the Buffalo District Office of the Corps of Engineers. Thank you.

COLONEL MOORE:

Thank you, Dr. Whitman. I have three people that desire either to talk or to ask questions, and I will call them in the order that I got the cards.

Mr. Leonard Schnell who is from Apple Creek, Ohio. He

1
2 is a farmer and president of the Ohio Farm Bureau. Mr.
3 Schnell?

4 MR. LEONARD SCHNELL:

5 Thank you. We certainly appreciate this effort to have
6 the opportunity to respond to the study, which is being made.
7 We have an appreciation of the problem which exists in our
8 metropolitan areas concerning the proper treatment and the
9 disposal of the effluent.

10 We have a natural concern concerning plan C, and while
11 it is not present in detail, we felt it important that at
12 each of these hearings, that some of these concerns be
13 expressed. Mainly, among these is the fact that the amount
14 of effluent that would be applied on the farm land of
15 North Central Ohio would represent an amount several times
16 that practiced in commercial fertilization on those acres
17 at the present time.

18 We have also been faced lately with the probability of
19 the eventual permit charges and pollution charges from each
20 tile and waterway outlet on each and every farm resulting
21 from nutrients that are found to be in the waters, which feed
22 those farms and enter into the waters of the public waters.

23 We have no reason at the present time but to suppose
24 that an application many times, which is now being practiced,

1
2 will also result in the increased amount of pollution from
3 those waters. We're wondering whose responsibility it is to
4 pay for this pollution charge into those waters. We're
5 concerned also about the metals which have also been mentioned
6 and the salts which are produced from them, which, if
7 accumulated in large enough quantities in the soil -- in the
8 first place, if they are not deposited in the soil, your
9 plan isn't working. If they are and if they accumulate, they
10 could render the soils incapable of producing food crops, and
11 until such a time there is a possibility that many of them
12 or of these metals and their compounds will be found in the
13 food products grown on these acres and in the live stock
14 which eat them.

15 We're wondering whose responsibility it will be to
16 cover the cost of the products taken from the market because
17 of the inclusion of these ingredients. We're concerned
18 what we feel must be a disturbing of the water supplies of
19 North Central Ohio by the digging of the deep tunnel from
20 Cleveland into that area. We're concerned at a time when
21 we're supposed to be conserving energy about a plan that will
22 consume nearly twice the energy as compared to some of the
23 other plans in order to carry it out.

1 We met with members or representatives of the Corps

of Engineers last year. We presented several of our concerns in question forms to them, and many of them are now being researched by the Ohio State University and other places. Of course, there hasn't been time for those questions to have come from the results of that research. I consider it highly unlikely that the results of that research will be completed in time for a decision by 1975. For all of these reasons, until the residents of those areas can be assured that there are acceptable answers to their concerns, those residents and the Ohio Farm Bureau must continue to be opposed to Plan C.

Mr. Chairman, I think that concludes my remarks. I have some copies if you care to look at them.

COLONEL MOORE:

I would like to have them. Thank you, Mr. Schnell, and I would just like to say that the Corps cared about the concerns of North Central Ohio sufficiently enough to fund the study effort being accomplished by Ohio State University today to look into your concerns, so I just wanted to say that we aren't totally satisfied that all the data record to answer those concerns fully to the public acceptance in North Central Ohio is available. That study effort is supposed to be finished in late August. I might also say

1
2 that the American Public Works Association is doing a
3 compendium of efforts on all or some projects in the world
4 not only the United States and that that effort should be
5 completed sometime toward the first part of August.

6 If those two are finished, we should have some details.

7 I might say that in looking at those efforts, it appears to
8 me that there isn't going to be any conclusive results
9 available to us in that short time, because there just
10 hasn't been that kind of specific scientific monitoring and
11 analyses of the data collected to provide those kinds of
12 data. That's what I referred to you in my original public
13 meetings and referred to you that I thought we needed the
14 projects done on a prior-to basis to that kind of data so
15 we could see that land treatment in its total form as
16 acceptable to the citizens of Ohio. That's the best I can
17 give you in response to this, Mr. Schnell. We don't dis-
18 agree with you. We still carry it as a viable alternative.

19 I feel like you that the possibility of answering all
20 those concerns to an acceptable state for the acceptance of
21 those plans for North Central Ohio by 1975 is very, very
22 questionable and hopefully they will respond as to whether
23 they will accept it or not.

24 Mimi Becker, from Hiram, Ohio, Land Use Chairman. I

guess the Land and Water -- I'm sorry. It is League of
Women Voters of Ohio. I know you. We meet so seldom.

MIMI BECKER:

Actually, I put that down as my official title for
mailing, but the questions I have are in concern with when
we decide upon a plan, who is going to be responsible for
implementing this plan?

Now, in connection with some of my work, I am a member
of the Tri-County Planning Commission, and I am also serving
on a Citizen's Advisory Board to NOACA. I am aware of the
fact that there are agencies that are responsible for trying
to implement any kind of plans that we come up with. I am
extremely concerned that we attempt to answer the questions
about procedures for implementation of whatever plan we
decide to accept as our priority and that we do this clearly
enough so that all of the government units involved will
understand the procedure and use them, because I see us
presently acting under impetus of necessities and beginning
to implement plans that might not plug in.

My other question has to do with a personal problem;
because coming from Hiram, Hiram is a village. In a town-
ship we get our water from the Cuyahoga basin. The village
discharges into the Mahoning basin. Part of the township

1
2 discharges into the Cuyahoga basin. We are on the borderline
3 of this plan, and we have a very serious sewage disposal
4 problem. Neither the Northeast Ohio Plan or the NOACA
5 Plan or this plan makes any provision with dealing with this
6 situation, and we would like to request some direction on
7 what similar communities might do in terms of solving this
8 problem. And that's a question.

9 COLONEL MOORE:

10 I will try to answer both of your questions as best I
11 can. Let's take the last one first.

12 There are going to be many, many outlying villages
13 that fall right within a water basin boundary, and because
14 most things to do with water quality have to do with basin
15 planning, we normally can figure even the Corps of Engineers'
16 district is along a water basin. Therefore, you sit on the
17 borderline. Should I jump over and join the Northeast Plan,
18 or should I jump over and join some other plan, which
19 doesn't exist.

20 I think these kinds of communities -- and I must inform
21 the higher governmental bodies of their personal concerns and
22 desires in this regard. Now, I will let the state build upon
23 that as soon as I finish the address of your first question,
24 and I will let them build upon that one, too, because really,

1
2 in the final analysis, they are going to have to handle both
3 of them.

4 In the concept of planning on urban studies by the
5 Corps, it is a concept of just that. We are providing a
6 planning service.

7 And the implementation and execution of those plans,
8 and by the way, they will probably never be implemented or
9 executed in any configuration you have seen tonight, as I
10 described the last time, and I think it would be foolish
11 for anybody to think they would be, because things are going
12 to evolve over time to change the conditions. Now, that kind
13 of answers your first question, because what we have to do,
14 I think, is set into being at the state level some very
15 defined rules and regulations governing all of the tech-
16 nologies described tonight. All of the technologies.

17 You have just as many concerns over physical-chemical
18 and advanced biological as there are over land treatment. The
19 only problem is to the farmer, who has the land, the land
20 treatment is real today. To the guy who doesn't know what
21 the effluent criteria is going to be out of advanced
22 biological, physical-chemical yet, and there are just as
23 many question marks on those, we don't know what that stream
24 quality is going to be.

George Watkins and I had a going argumentation, or a collective agreement, I'm not sure which, that the fact that this study did not include a monitoring of the three rivers basin and the impact of effluent discharge and the establishment of better effluent discharges in the future and just how far do we have to go in order to achieve the river quality standards that we desire. That was left out of the study, because of time, money, and all the kinds of constraints you can think of. Nor would it have been appropriate to delve into right now, because I am not going to execute or implement anything today.

Prior to implementation and execution on even a county basis, I would strongly suggest that that's necessary. Now, Dr. Whitman hinted at a bigger study called Lake Erie. I don't feel that you can describe the water quality decided in the Cuyahoga River unless you can determine what its impact on Lake Erie itself is going to be, and, therefore, what do you want Lake Erie to be and what is it today, and those questions have not been resolved either.

It seems to me that we ought not to start up-stream, but we ought to start in the final basin. Now, you say that you have to start in the Atlantic Ocean. That may be so, but at least we ought to start in Lake Erie.

1
2 So, we may set the stream quality standards in the
3 interim period of streams that contribute to a larger basin
4 and change those as we find out what the larger basin
5 requires.

6 All of this is going to take regulation.

7 You have very good secondary treatment plants out there
8 today, but without the proper maintenance, they are not
9 giving you good secondary treatment and, secondly, you over-
10 load them, because of time constraints on building a bigger
11 one. The effluent formula for those secondary plants may not
12 be because they are out-moded. They may be out-gunned.

13 So, there has got to be definite criteria of regulations
14 and rules established. I don't know as how that can come
15 anywhere but the state level or assigned to the state to
16 whatever kinds of districts they establish to control these
17 things.

18 Now, how far you go down to assignments by regulation
19 and who eventually controls it at what level, I don't know.
20 Construction or operation? It is a question I can't answer.
21 Mam.. That has to be left to the state and their desires.
22 I will turn your questions over to the state if they want
23 to respond. Bill, do you want to respond to that? This is
24 Mr. Bill Sellers, the Chief of Planning in Ohio EPA.

2 MR. BILL SELLERS:

3 The question of Hiram, I wouldn't like to address just
4 to that question, because we're presently working with Ken
5 Boydell from Portage County on Plant 4 at Hiram and for a
6 hearing in forty days. Maybe I told you that before, but we
7 had a few problems in the interim, and as a result that's
8 why it has been postponed for some time.

9 Hiram was in the Northeast Plan in the entirety, so it
10 was covered from that respect. But with respect to your
11 question about implementation.

12 The guidelines for facilities planning which U. S. EPA
13 has put out require that the alternative waste treatment
14 techniques be examined by every locality applying for federal
15 construction grant funds. The way we see this, this would
16 mean land disposal of final effluent as well as advanced
17 chemical or physical-chemical or biological treatment. And
18 these have to be assessed in terms of their cost effectiveness
19 over a period of amortization of the construction costs.

20 This hasn't been done too much in the past. It has
21 usually been one choice that has been made as to what kind
22 of treatment is going to be used by a community, and that is
23 what we eventually approved for construction. Now, the
24 requirements for qualities planning require that everyone

1
2 look at the various methods or treatment as well as alterna-
3 tive areas or regional types or treatment systems.

4 This is one way to get at it. The planning division
5 must review these plans to the extent that these would be
6 applied at a local level. We would certainly encourage that
7 they be looked at seriously. I don't think that as an
8 agency we're opposed to it. We think there are a lot of
9 advantages to going to this method, but it has to be the
10 kind of thing that has to come from the local level.

11 As a citizen, also, you have to review the environmental
12 assessment of every project for construction grants funds in
13 your community, that is, the city has to inform you of what
14 they intend to do and what their environmental assessment
15 is. It is at this point that you can help the Ohio EPA
16 also in assessing what the impact of the project will be
17 locally. This is another point, and I think a very impor-
18 tant point, which is that no matter how large the state
19 staff could ever be, it can't make up for the individual
20 citizens input in contributions to the assessment of local
21 projects. I think a very important point of achieving any
22 plan is the degree to which citizens put their support
23 behind one type of project or another.

24 Really, as far as plans are concerned, we have got

or had through the years various plans for different areas of the state. I don't think that we can look back and say that everyone of them was achieved exactly as we intended, because we found out as we went along different things cropped up. There was a park in the way of a major interceptor sewer, and we didn't want to tear up the park, or there was something else that would pose a constraint toward the development of these plants. It wasn't originally recognized, because we were operating at such a rather high level. It is through citizen input that a lot of plans have actually been changed, so to say that we're going to implement something concretely, positively, and without fail is kind of like committing yourself to go to a certain location and not ever getting there. Does that answer in part your question?

MIMI BECKER:

Yes.

COLONEL MOORE:

I think the big problem is that when you do a regional plan, it calls for a collective amalgamation of some smaller towns. Now, how does the local community get that accomplished? Sometimes it can't, because the small towns have a harder time getting together sometimes than would if

1
2 somebody came in and said, "Let's get together." How you
3 accomplish that is a very difficult task, because there are
4 obviously cost advances to create a central treatment
5 facility sometimes. It is a difficult task to come by from
6 an institutional point of view.

7 MR. BILL SELLERS:

8 Whether that is cost effective and our division reviews
9 this, and that's the cost effective method, then none of
10 the individual towns will ever get funded separately.

11 COLONEL MOORE:

12 That's correct. That's the difficulty in the
13 involvement.

14 MR. BILL SELLERS:

15 When it is funded properly, that will be a restraint
16 as far as individual towns are concerned.

17 COLONEL MOORE:

18 So I thought by that lead-in I would spur Bill to tell
19 you that that's the way it will go.

20 MIMI BECKER:

21 My question was who was going to make the decision?

22 COLONEL MOORE:

23 You found out.

24 MIMI BECKER:

1
2 Right.

3 COLONEL MOORE:

4 I think that's the only think that can occur.

5 UNIDENTIFIED MAN #2:

6 The people in Hiram will make this decision?

7 COLONEL MOORE:

8 Yes.

9 I have a Mrs. Kylin. She is the chairman of the
10 Central Area Committee of the Lake Erie Basin Committee.

11 Is that correct?

12 MRS. HENRIK KYLIN:

13 Yes.

14 COLONEL MOORE:

15 Thank you, m'am. If I damaged that name too badly --

16 MRS. HENRIK KYLIN:

17 You did very well. Thank you.

18 I am the Vice-Chairman of the Central Area Committee
19 which corresponds with the area that we have been assigned
20 in the Great Lakes Basin Commission Study. That area is 4.3.
21 It includes the three rivers watershed and a little bit
22 farther west. We represent about 28 of the local League of
23 Women Voters, and it is a sub-committee of the Lake Erie
24 Basin Committee.

1
2 (Reads Exhibit 2.)
3

COLONEL MOORE:

Thank you for your comments. I am amazed you have
really gone into the study. There are hydrologic problems
in North Central Ohio, and there are flow problems in the
Cuyahoga. That's a good summation. I have one more input
identified at this point in time. It was provided by letter,
and I was asked to run through this. It was not provided to
me. It was provided to Mr. Woldorf of the Ohio State
Department of Natural Resources.

It is provided by Earthview, Inc. environmental
scientists and signed by Dr. George R. Kunkle of that
institution.

(Reads Exhibit 3.)

COLONEL MOORE:

That's about a summation of his comments.

I have no more requests to speak. I would ask if there
is anybody else who would like to speak that has not
indicated so.

MR. GEORGE WATKINS:

I have a question.

COLONEL MOORE:

Yes, George.

1
2 MR. GEORGE WATKINS:

3 I would like to direct this to the audience here and
4 a very skillfully done suggestion here that Plan B, which is
5 one in the watershed district, uses a significant amount of
6 land disposal in the upper watershed, that is, in the upper
7 part of the Cuyahoga, in the upper part of the Chagrin, and
8 the upper part of the Rocky. That's Rocky River.

9 What I would like to know is whether any of you have
10 any feelings here about the acceptability in your own
11 neighborhoods for land disposal systems. You heard Dr.
12 Whitman say earlier that on a town of 10,000 or a town of
13 100,000, four hundred acres was needed, and you can scale
14 that down to smaller-sized communities. I would like to
15 get some feeling if anybody has anything about the
16 acceptability of this idea in the area.

17 COLONEL MOORE:

18 Yes.

19 MR. LEONARD SCHNELL:

20 Colonel Moore, just one comment. I hate to let this
21 go unchallenged right now.

22 COLONEL MOORE:

23 It is 10,000 for four hundred acres.

24 MR. LEONARD SCHNELL:

1
2 Yes. 10,000 for four hundred acres.
3

4 COLONEL MOORE:
5

6 Is just a mistake in the typing. Okay? It is
7 10,000 for four hundred acres. Thank you very much for
8 doing that. I was going to suggest that that might be a
9 typographical error. George almost stumbled over it him-
10 self.

11 UNIDENTIFIED MAN #3:
12

13 I have the right number in my mind. That's all. I
14 think this concerns on behalf of the Ohio Farm Bureau and
15 expresses what the farmers might think in this area.
16

17 COLONEL MOORE:
18

19 You must realize that the soils in the basin are
20 different, very different from the soils in the North
21 Central Ohio area. In the basin, most of the soils utilized
22 are, in fact, sandy soils, which are customarily utilized
23 in land treatment concepts of the past. It is a greater
24 filtration rate. There is not as much chance of the water
collecting on the top with heavy rainfall in the area and
that kind of thing. We went to the tighter soils from two
standpoints. One was to look at a total land system and
then we were driven to those kinds of soils, and thank god
we were. Because if you apply the right application rates,

depending upon the farmers' requirements and crop patterns,
you have got to design the crop pattern to take the nutrient
contents of the effluent. So, it is not an easy design
problem. Given all those things, the tighter soils will
give a better effluent quality of the water flowing through
them and all the treatment occurs in about the first foot
of soil, whereas some of the problems will run off and the
nutrient contents of that run off in the areas today is
because of the application of artificial nutrients on top
of the soils as well as the water running through. You have
got some of the same kinds of problems, but the soils are
different.

I just wanted to make sure that we all understood that.
It is expressed in the study, and the application rates
envisioned in the study are different, although they may not
be correct. When you get down to design and the discern
that the farmer wants to keep in that area, it has a heck of
a lot to do of what application rates you use. If he is
not willing to change his crop patterns, which is farm
management in one of the problems discussed by the Farm
Bureau and the citizens of North Central Ohio, then you have
got to back off and change the application rate to meet the
crop pattern he wants to continue.

1
2 Sir, did you want to comment on anything?

3 UNIDENTIFIED MAN #4:

4 In your discussion you talked about the big sewage
5 disposal plants. I come from a rural community of 1200
6 people with 1200 septic tanks.

7 How are you going to eliminate them?

8 COLONEL MOORE:

9 The 1200 septic tanks will probably not be eliminated
10 at all. The problem you have in septic tanks, if I may
11 address that, is a land zoning problem. If you are not
12 going to zone such that there is sufficient land for a
13 septic tank to work correctly and you start collecting the
14 build-up in that area which has been done, by the way, in
15 some of the areas in the -- I have to remember the geography.

16 The last public meeting we had, Jim, were you there with me?

17 JIM SPEAKMAN:

18 Yes, sir. That was with reference to Geauga County.

19 COLONEL MOORE:

20 Yes. You don't have some of the pattern of people in
21 there today to warrant the change, so you keep the old
22 system of septic tanks. You must land-zone so that you don't
23 put an additional build-up of people in that area, because
24 it takes some land to do that. When you do, if you forego

that opportunity to retain the septic tanks and the 1200 acres per person or whatever it is, that's an overstatement or whatever the acreage is per person or people per acre -- I say, if more people move in per square mile, you may run into the problem of foregoing septic and having to be on the municipal system. That's what we're talking about here. It is the wing. If you keep the septic tanks, you keep it under a tightly controlled density per acre. And that's part of the regulatory device I was talking about which we must set up no matter what the technology is to include septic tanks. That's covered in the plan.

Does anybody else have any comments or questions they would like to ask or make?

I certainly appreciate your time and consideration in coming out to this meeting. I think it has been an important meeting. I think it shows the cooperative nature between us and the planners for the state and the state's outlook into the future utilizing the planning tool provided. It is not complete. It has some faults and falls short in many respects.

We are trying as best we can to proceed down next sixty days of evaluation with the state to point out its strong points, and its weaknesses. We can only do that with

1
2 your help, because some of the weaknesses are closely
3 attuned to your public concerns. We do need your input
4 and we do invite your input. We will use your input.
5 Thank you very much. Does anybody else have anything they
6 would like to say?

7 (No response.)

8 COLONEL MOORE:

9 Thank you. Good night.

10

11

12

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24

METALS

Exhibit 1

LADIES AND GENTLEMEN--

in Funderman

SLIDE 1 ON

IT IS A PLEASURE TO RETURN TO THE THREE RIVERS WATERSHED AREA TO PRESENT THE FINAL SERIES OF PUBLIC HEARINGS IN THE PLANNING PROCESS BEING ACCOMPLISHED BY THE CORPS OF ENGINEERS FOR THE STATE OF OHIO TO DEVELOP LOGICAL AND ACCEPTABLE CONCEPTS FOR WASTEWATER MANAGEMENT FOR THE AREA DEPICTED ON THIS SLIDE. I WANT TO EXPRESS MY PERSONAL APPRECIATION FOR THE STATE OF OHIO CO-CHAIRING THEIR FINAL PRESENTATIONS. I PARTICULARLY DESIRE TO THANK DR. WHITMAN AND MR. NYE FOR TAKING TIME FROM THEIR BUSY SCHEDULES TO LEND THEIR SUPPORT BEHIND THE OBVIOUS IMPORTANCE OF THIS PLANNING EFFORT. AND BEFORE I FORGET, THERE ARE OTHER PERSONNEL IN THE STATE WHO HAVE GREATLY CONTRIBUTED TO THIS EFFORT. THEY ARE MR. JIM SCHAFER, DEPUTY TO MR. NYE; MR. BILL SELLERS, CHIEF, PLANNING DIVISION, OHIO EPA; MR. ART WOLDORF, OUR POINT OF CONTACT FOR DNR AND EPA DOING MOST OF THE STUDY, AND MR. GEORGE WATKINS, SECRETARY-TREASURER, THREE RIVERS WATERSHED DISTRICT. THE LAST TWO PEOPLE HAVE WORKED CLOSELY WITH THE CORPS NOT ONLY IN WASTEWATER BUT IN THE DEVELOPMENT OF THE CONCEPTS. FOR THIS WE ARE THANKFUL. WE WISH TO ALSO THANK YOU, THE PUBLIC WHO HAVE PROVIDED THE MOST TO THIS EFFORT THROUGH YOUR CONSTANT CONTACT WITH THE STUDY AND PROVISION OF WORTHWHILE INFORMATION WHICH AS WILL BE SEEN HAS GREATLY INFLUENCED THE RESULTS.

SLIDE 1 OFF

SLIDE 2 ON

DURING OUR PREVIOUS PUBLIC MEETINGS WE HAVE DETAILED FOR YOU THE SEVERAL STEPS WE WOULD FOLLOW IN THE DEVELOPMENT OF THIS STUDY. THEY ARE SHOWN NOW FOR REVIEW. WE AT THAT TIME WERE COMPLETED WITH THREE AND HAD ACCOMPLISHED SOME EFFORT IN ALL OTHER STEPS. WE ARE NOW COMPLETING THE STUDY WITH ONLY THREE FACTORS REMAINING PRIOR TO OUR SUBMISSION OF THE FINAL REPORT FOR REVIEW AT THE FEDERAL LEVEL. THESE THREE FACTORS ARE SHOWN ON THE NEXT SLIDE.

SLIDE 2 OFF

SLIDE 3 ON

THE FINAL PUBLIC INVOLVEMENT FROM THESE MEETINGS MUST BE ASSESSED AND APPROPRIATE CHANGES IN THE REPORT MADE.

THE OHIO STATE UNIVERSITY IS CURRENTLY EXAMINING THE AGRICULTURAL ASPECT OF THE PLANS AND THEIR FINDINGS WILL HAVE AN IMPACT ON OUR FINAL CONCLUSIONS.

THE STATE OF OHIO MUST HAVE THE PREVIOUS TWO INPUTS PRIOR TO MAKING THEIR FINAL RECOMMENDATIONS IN ACCEPTING THE PLANNING EFFORT.

I WOULD LIKE TO REVIEW THE PROCESS OF REDUCTION OF THE 12 ALTERNATIVES TO THE SELECTION OF THE FOUR RETAINED PLANS. TO DO THIS I WILL SHOW EACH OF THE 12 PLANS AND STATE IN SUMMARY FASHION WHY THEY WERE RETAINED OR DISCARDED, REALIZING THAT NO PLAN IN TOTAL WAS RETAINED BUT THAT INSTEAD, EACH RETAINED PLAN WAS OPTIMIZED WITH RELATION TO THE BEST CHOICES FOR STORMWATER AND UNTREATED WASTE AND SLUDGE MANAGEMENT.

SLIDE 3 OFF
SLIDE 4 ON

PLAN 1 IS THE NORTHEAST OHIO PLAN UPDATED TO LEVEL I TREATMENT CRITERIA.

SLIDE 4 OFF
SLIDE 5 ON

PLAN 3 IS THE NEO PLAN UPDATED TO LEVEL II CRITERIA WHICH IS THE CORPS OF ENGINEERS INTERPRETATION OF THE 1985 GOALS IDENTIFIED IN THE WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972. PLANS 10 AND 11 JUST LOOKED AT THE COST DIFFERENCE BETWEEN ADVANCED BIOLOGICAL AND PHYSICAL CHEMICAL. SINCE THE COSTS DIFFERENTIALS WERE MINIMAL, THE DECISION BETWEEN THESE TWO TECHNOLOGIES BECOMES A CASE BY CASE, PLANT BY PLANT DECISION. THEREFORE PLANS 10 AND 11 WERE DISCARDED.

WITH RESPECT TO PLAN 1 AND PLAN 3, THE ONLY DIFFERENCE IS LEVEL OF TREATMENT AND SOME MINOR CHANGES IN PLANT LOCATIONS IN PLAN 3. THE STATE OF OHIO DESIRED THE RETENTION OF PLAN 1 AND THE UPDATE OF THAT PLAN TO LEVEL II CRITERIA; THEREFORE PLAN 3 WAS DISCARDED.

SLIDE 5 OFF
SLIDE 6 ON

I SHOULD TAKE ONE MINUTE TO SHOW THE COMPARISON OF LEVELS OF TREATMENT. THE LEVEL I, OHIO EFFLUENT STANDARDS AND LEVEL II, THE 1985 GOAL, ARE SHOWN HERE. WE RETAIN PLAN 1, WHICH WE CALL PLAN A FOR DEVELOPMENT, WITH THAT DEVELOPED TO LEVEL I CRITERIA AS PLAN A_I AND TO LEVEL II CRITERIA AS PLAN A_{II}.

SLIDE 6 OFF

SLIDE 7 ON

WE ALSO LOOKED AT TOTAL LAND TECHNOLOGY SCHEMES. PLANS 2 AND 4 TO LEVELS I and II, RESPECTIVELY, UTILIZED THIS TECHNOLOGY BY DEVELOPING TREATMENT SITES IN NORTH CENTRAL OHIO SINCE SUFFICIENT LAND IS NOT AVAILABLE WITHIN THE BASIN.

SLIDE 7 OFF

SLIDE 8 ON

PLAN 12 WAS ALSO DEVELOPED TO PLACE MORE OF THE LAND TREATMENT IN BASIN BY A VARIATION OF THE LAND TECHNOLOGY. NONE OF THESE TOTAL LAND SCHEMES WERE CONSIDERED ACCEPTABLE BECAUSE OF THE DECREASE IN FLOWS CREATED IN THE MIDDLE AND/OR LOWER CUYAHOGA BY THE TRANSPORT OF WATER TO NORTH CENTRAL OHIO.

SLIDE 8 OFF

SLIDE 9 ON

WE THEN LOOKED AT COMBINING TECHNOLOGIES. PLANS 5 AND 7 AT LEVELS I AND II, RESPECTIVELY, KEPT ALL TREATMENT WITHIN THE THREE RIVERS WATERSHED. THE UPPER, LESS DENSELY POPULATED RIVER BASIN AREAS UTILIZE LAND TECHNOLOGY. THE REMAINDER UTILIZE AB/PC. THE COMPARATIVE COSTS AND OBVIOUS ADVANTAGE OF ALL IN-WATERSHED TREATMENT OF THE PLANS CALL FOR ITS RETENTION FOR FURTHER STUDY.

SLIDE 9 OFF

SLIDE 10 ON

SINCE TOTAL LAND TECHNOLOGY SEEMED TO BE THE CHEAPER OF ALL TECHNOLOGIES AND PROVIDE FOR MAXIMUM RECYCLING OF THE BY-PRODUCTS OF THE TREATMENT SYSTEM, WE DEVELOPED PLANS 6 AND 8 AS MAXIMUM LAND TECHNOLOGY ALTERNATIVES ACCEPTABLE FROM THE STANDPOINT OF PROVIDING ~~IN THE CUYAHOGA~~ SUFFICIENT FLOWS TO MAINTAIN FLOW RATE FOR MAXIMUM WATER USE PURPOSES. SOME OF CLEVELAND AND ALL OF AKRON ARE TREATED BY AB/PC. THIS PLAN IS RETAINED FOR FURTHER STUDY TO COMPLETE A SET OF PLANS TO PROVIDE MAXIMUM FLEXIBILITY FOR FUTURE DECISION. THIS IS THE FOURTH AND FINAL PLAN RETAINED AS SUGGESTED BY THE CORPS AND REQUESTED BY THE STATE.

SLIDE 10 OFF

SLIDE 11 ON

A FINAL PLAN, NO 9, WAS DEVELOPED TO DETERMINE THE COST/EFFECTIVITY OF FURTHER REDUCTION IN NUMBER OF PLANTS (REGIONALIZATION). THE ~~NO~~ PLAN SEEMED TO BE THE OPTIMUM REGIONALIZATION. THEREFORE PLAN 9 WHICH PROVED MORE COSTLY WAS DISCARDED. THE BROCHURE, QUEST FOR QUALITY, AVAILABLE HERE TONIGHT WILL PROVIDE A SUMMARY OF THE INITIAL PHASE OF THE PLANNING EFFORT.

SLIDE 11 OFF

SLIDE 12 ON

Report AB I WILL NOW DISCUSS THE FINAL FOUR PLANS, OUR EVALUATION OF THESE PLANS IN CONSIDERATION OF ENGINEERING, COST, ENVIRONMENTAL, SOCIAL AND INSTITUTIONAL, AS WELL AS PUBLIC ACCEPTANCE. YOU MUST REALIZE THIS IS

▲ PRELIMINARY REPORT SUBJECT TO CHANGE WITH INPUT FROM THESE FINAL PUBLIC HEARINGS, THE OSU STUDY REPORT, AND STATE EVALUATION AND RECOMMENDATIONS AS WELL AS COMMENTS BY FEDERAL AGENCIES AS THE STUDY PROCEEDS UP THE NORMAL LADDER OF REVIEW. COPIES OF THE DRAFT SUMMARY REPORT HAVE BEEN PLACED IN LIBRARIES AND WITH LOCAL OFFICIALS AS WELL AS CONCERNED PUBLIC.

SLIDE 12 OFF

SLIDE 13 ON

THESE FINAL PLANS ARE DEVELOPED TO FULLY CONFORM TO THE:

1. DESIRES OF THE STATE OF OHIO WITH RESPECT TO STREAM QUALITY AND COMPATIBILITY WITH ONGOING EFFORTS KEYED TO THE NEO PLAN.
2. GOALS ESTABLISHED BY THE WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972.
3. 1972 WATER QUALITY AGREEMENT BETWEEN CANADA AND THE U.S.
4. GUIDANCE FROM THE OFFICE, CHIEF OF ENGINEERS.

THE MOST IMPORTANT GUIDANCE FROM THE OFFICE, CHIEF OF ENGINEERS IS THE OBJECTIVE TO ASSURE THAT ALL ALTERNATIVE SYSTEMS MUST BE EVALUATED IN TERMS OF ECONOMICS, SOCIAL EFFECTS, ENVIRONMENTAL IMPACTS, AND INSTITUTIONAL IMPACTS.

SLIDE 13 OFF

BLANK SLIDE ON

PRIOR TO THE DEVELOPMENT OF THE SPECIFIC DETAILS OF THE FOUR WASTEWATER MANAGEMENT PLANS, OPTIONS WERE EVALUATED FOR INDUSTRIAL WASTEWATER TREATMENT, URBAN STORMWATER RUNOFF, AND SLUDGE MANAGEMENT. THE EVALUATION OF THESE OPTIONS LED TO THE SELECTION OF THE BEST OPTION FOR THE PLAN LAYOUT AND TECHNOLOGY CHOSEN.

FOR INDUSTRIAL WASTEWATER, THE INDUSTRIAL DISCHARGES WERE SEPARATED INTO TWO GENERAL CATEGORIES: (1) THOSE DISCHARGED DIRECTLY INTO A WATERWAY AND (2) THOSE DISCHARGED INTO A MUNICIPAL SEWERAGE SYSTEM. THE DISCHARGES DIRECTLY INTO A WATERWAY MUST BE TREATED BY INDUSTRY TO THE APPROPRIATE LEVEL I OR LEVEL II CRITERIA PRIOR TO DISCHARGE. THOSE DISCHARGED INTO A MUNICIPAL SYSTEM MUST BE PRETREATED BY INDUSTRY TO A LEVEL COMPATIBLE WITH THE CAPABILITY OF THE MUNICIPAL SYSTEM TO TREAT THE EFFLUENT TO FINAL TREATMENT CRITERIA.

THE COMPATIBILITY CRITERIA ARE CONTAINED IN THE PLANNING DOCUMENTS. THE MANAGEMENT OPTIONS FOR PRETREATMENT ARE LISTED ON THIS CHART.

BLANK SLIDE OFF

CHART 14 ON

ON THE BASIS OF PERFORMANCE ALONE, TREATMENT OPTION 5 MUST BE ELIMINATED FROM FURTHER CONSIDERATION IN REFINED PLANS WHICH MEET LEVEL II CRITERIA. SINCE NONE OF THE TECHNOLOGIES USED IN THIS STUDY HAVE THE INHERENT CAPABILITY TO EFFECTIVELY REDUCE DISSOLVED SOLIDS, PRETREATMENT AT THE INDUSTRY FOR THEIR REDUCTION IS REQUIRED. OPTION 5 EXCLUDED PROCESSES TO REDUCE DISSOLVED SOLIDS.

THE EVALUATION AND PUBLIC REVIEW REINFORCED THE UNCERTAINTY ASSOCIATED WITH UNRESTRICTED APPLICATION OF HEAVY METALS ON THE LAND. THE ABILITY OF THE SOILS TO ABSORB THOSE METALS IS RECOGNIZED; HOWEVER, THE IMPACTS OF THE ACCUMULATION IN CROPS AND THE CONSUMERS OF THOSE CROPS REMAINS UNCERTAIN. THEREFORE, OPTION 4 IS ELIMINATED FROM CONSIDERATION IN REFINED PLANS EMPLOYING THE LAND TREATMENT TECHNOLOGY.

OPTION 2 IS TOTAL TREATMENT AND RECYCLE BY INDUSTRY. FOR DESIGN PURPOSES IT WAS EXCLUDED. IT DOES PROVIDE A SAVINGS TO INDUSTRY TO ACCEPT THIS ALTERNATIVE. ONLY OPTIONS 1 AND 3 REMAIN FOR INCORPORATION IN AREAWIDE WASTEWATER MANAGEMENT PLANS MEETING LEVEL I AND LEVEL II, RESPECTIVELY. THEREFORE, THE COMPONENT COST FOR INDUSTRIAL TREATMENT IS CONSTANT THROUGHOUT ALL PLANS MEETING THE SAME LEVEL CRITERIA; \$41 MILLION ANNUALLY FOR LEVEL I PLANS AND \$65 MILLION ANNUALLY FOR LEVEL II PLANS.

SLIDE 14 OFF

SLIDE 15 ON

WE HAVE TWO PROBLEMS TO SOLVE WITH STORMWATER. HOW MUCH TO COLLECT AND TREAT AND WHAT MANAGEMENT OPTION FOR TREATMENT. WITH RESPECT TO VOLUME, THE PROPORTION OF THE AVERAGE ANNUAL URBAN STORMWATER RUNOFF THAT SHOULD BE COLLECTED FOR TREATMENT WAS DETERMINED BY EXAMINING THE RELATIONSHIPS AMONG THE PERCENTAGE OF RUNOFF COLLECTED AND THE COST AND EFFECTIVENESS OF THE TREATMENT SYSTEM. THE COMBINED INFORMATION DISPLAYED HERE LED TO THE DECISION TO DEVELOP SYSTEMS HAVING THE CAPACITY TO COLLECT AND TREAT, OVER THE YEAR, 97.3 PERCENT OF THE AVERAGE ANNUAL URBAN STORMWATER RUNOFF. THIS CHART SHOWS FOR EXAMPLE

THAT IF THE PERCENTAGE OF STORMWATER COLLECTED FOR TREATMENT WERE INCREASED TO 99 PERCENT, COST WOULD BE INCREASED BY AT LEAST 30 PERCENT, WITH A RESULTANT INCREASE IN SUSPENDED SOLIDS REMOVAL OF LESS THAN 2 PERCENT. OTHER POLLUTION PARAMETERS DEMONSTRATE A SIMILAR RELATIONSHIP. THE SYSTEM CAPACITY SELECTED WILL ALLOW SOME URBAN STORMWATER RUNOFF TO ESCAPE WITHOUT TREATMENT AN AVERAGE OF ONCE A YEAR.

USING THE LAND USE PROJECTIONS AVAILABLE, THOSE DRAINAGE BASINS WERE IDENTIFIED THAT ARE PROJECTED TO EXPERIENCE SUFFICIENT DEVELOPMENT BY 2020 TO BE CLASSIFIED AS URBAN. 162 BASINS WERE IDENTIFIED.

SLIDE 15 OFF

SLIDE 16 ON

URBAN STORMWATER TREATMENT OPTIONS INCLUDE: (1) LOCAL COLLECTION AND TREATMENT FOLLOWED BY DIRECT DISCHARGE TO THE STREAM, (2) COLLECTION AND STORAGE FOLLOWED BY TREATMENT IN A MUNICIPAL FACILITY DURING PERIODS OF REDUCED MUNICIPAL WASTEWATER FLOW, AND (3) LOCAL COLLECTION, STORAGE, AND DIRECT LAND TREATMENT.

THE EVALUATION AND PUBLIC REVIEW PROVIDED NO CLEARCUT ADVANTAGE TO ANY OF THESE OPTIONS, SINCE ALL OPTIONS COLLECT THE SAME VOLUMES OF URBAN STORMWATER RUNOFF AND TREAT IT TO THE SAME LEVEL. THEREFORE, IN THE REFINEMENT OF THE PLANS, COMBINATIONS OF STORMWATER TREATMENT OPTIONS ARE INCORPORATED TO MATCH THE APPROPRIATE TECHNOLOGIES AND PLAN CONFIGURATIONS AND TO OPTIMIZE COSTS.

SLIDE 16 OFF

SLIDE 17 ON

FROM AN ENVIRONMENTAL POINT OF VIEW, THE APPLICATION OF SLUDGE TO BARREN STRIPMINED LAND FOR RESTORATION AND REVEGETATION WAS ESTABLISHED AS THE FAVERED OPTION. THIS OPTION PROVIDES FOR RECYCLING ORGANICS AND NUTRIENTS EXTRACTED FROM WASTEWATER TO RESTORE LAND AREAS OTHERWISE LEFT BARREN, SOME OF WHICH PRODUCE ACID MINE DRAINAGE THAT POLLUTES OTHER WATERWAYS.

SECOND PRIORITY WAS GIVEN TO THE APPLICATION OF SLUDGE TO LOCAL AGRICULTURAL LANDS BECAUSE OF THE RECYCLE OF THE ORGANICS AND NUTRIENTS FOR SOIL ENRICHMENT. INCINERATION WAS RESERVED AS THE LAST CHOICE OPTION TO BE AVOIDED WHERE POSSIBLE.

COST COMPARISONS OF THE THREE OPTIONS DEMONSTRATED THE SAME RELATIONSHIPS. INCINERATION IS THE MOST EXPENSIVE OPTION, THE COST PER TON BEING APPROXIMATELY 1.6 TIMES THAT OF THE OTHER TWO OPTIONS. AGRICULTURAL LAND APPLICATION AND STRIPMINE LAND APPLICATION ARE SIMILAR IN COST, WITH LOCAL AGRICULTURAL LAND APPLICATION HAVING A SLIGHT ECONOMIC ADVANTAGE. IN THOSE ALTERNATIVES EMPLOYING AERATED LAGOONS IN NORTH CENTRAL OHIO, AGRICULTURAL LAND APPLICATION IS GIVEN THE ECONOMIC ADVANTAGE, BECAUSE OF THE LONG DISTANCE FROM THAT AREA TO THE STRIPMINED LANDS IN SOUTH EASTERN OHIO.

THE RESPONSE OF THE PUBLIC, PARTICULARLY IN HARRISON COUNTY, HAS GENERALLY BEEN ENTHUSIASTICALLY IN SUPPORT OF THE STRIPMINE REVEGETATION AND RESTORATION OPTION. SOME LOCAL GROUPS THERE HAVE ALREADY BEGUN TO PURSUE AN EARLY BEGINNING OF THE TRANSPORT OF SLUDGE TO THE COUNTY FOR APPLICATION TO STRIPMINE LAND AND TO AGRICULTURAL LAND.

THE ONLY INSTITUTIONAL PROBLEM REGARDING SLUDGE MANAGEMENT OPTIONS RELATED TO THE TRANSPORT OF SLUDGE WATER FROM THE LAKE ERIE BASIN. WE HAVE INFORMALLY PURSUED THE REQUEST FOR PERMISSION TO REMOVE WATER FROM THE LAKE ERIE BASIN AND BELIEVE THE IJC WILL ACT FAVORABLY ON SUCH A REQUEST.

THE DECISION TIME FOR SLUDGE MANAGEMENT FOR CLEVELAND IS NOW SINCE THAT CITY PROPOSES TO EXPEND CONSIDERABLE FUNDS ON UPGRADING ITS INCINERATION FACILITIES AT SOUTHERLY. THE CITY HAS INDICATED AN INTEREST IN THE STRIPMINE OPTION. ALL PLANS CURRENTLY UTILIZE INCINERATION UNTIL 1990. THIS CAN BE CHANGED TO REFLECT IMMEDIATE USE OF STRIPMINE APPLICATION DEPENDING ON THE STATE'S RECOMMENDATION AND WILL DECREASE TOTAL COSTS.

SLIDE 17 OFF

SLIDE 18 ON

WITH RESPECT TO THE FINAL FOUR PLANS:

PLAN A, TO LEVEL I, DUPLICATES THE GEOGRAPHICAL LAYOUT OF TREATMENT FACILITIES IN THE THREE RIVERS WATERSHED PORTION OF THE NORTHEAST OHIO WATER DEVELOPMENT PLAN FOR WATER QUALITY CONTROL. THE PLAN IS REGIONAL, WITH A TOTAL OF 26 PROPOSED MUNICIPAL PLANTS, EIGHT OF WHICH ARE NOW IN EXISTENCE. MUNICIPAL SEWAGE IS GIVEN BIOLOGICAL TREATMENT IN ALL PLANTS EXCEPT CLEVELAND WESTERLY, ROCKY RIVER, AND NEW KENT, WHERE PHYSICAL-CHEMICAL TREATMENT IS UTILIZED (SHOWN HERE AS TRIANGLES). NEW KENT WAS ORIGINALLY PROPOSED AN ADVANCED BIOLOGICAL. THE CONSTRUCTION IS PHASED TO MEET CURRENT APPROPRIATE STATE OF OHIO STANDARDS AND LEVEL I CRITERIA FOR 1977 AND 1983 AS REQUIRED BY PUBLIC LAW 92-500. AFTER 1983, PLAN A TO LEVEL I MAINTAINS THAT WATER QUALITY AND MERELY ENLARGES FACILITIES TO ACCOMMODATE INCREASED FLOWS.

PLAN A TO LEVEL II IS THE SAME GEOGRAPHICAL LAYOUT OF PLAN A TO
OF THIS PLAN AS WELL AS PLANS B AND C IS
LEVEL I. THE CONSTRUCTION PHASED TO MEET APPROPRIATE STATE OF
OHIO STANDARDS, AND LEVEL I AND II CRITERIA FOR 1977, 1983, AND 1985
AS REQUIRED BY PUBLIC LAW 92-500.

SLIDE 18 OFF

SLIDE 19 ON

PLAN B COMBINES THE TECHNOLOGIES OF ADVANCED BIOLOGICAL, PHYSICAL-CHEMICAL, AND LAND TREATMENT TO ACHIEVE LEVEL II CRITERIA. A SIGNIFICANT ASPECT OF THIS PLAN IS THAT, AS IN BOTH LEVELS OF PLAN A, ALL FEATURES ARE WITHIN THE THREE RIVERS WATERSHED AREA.

PLAN B IS SIMILAR TO PLAN A TO LEVEL I IN THAT NINE LARGE MUNICIPAL PLANTS ARE COMMON TO BOTH PLANS. THESE INCLUDE CLEVELAND SOUTHERLY, AKRON, NEW KENT, AND SIX PLANTS LOCATED ON OR NEAR THE LAKE ERIE SHORELINE. AS IN PLAN A-II, CLEVELAND WESTERLY, ROCKY RIVER, AND NEW KENT ARE PHYSICAL-CHEMICAL PLANTS: THE REMAINDER ARE ADVANCED BIOLOGICAL PLANTS. ALL OTHER WASTEWATER TREATMENT FACILITIES LOCATED IN THE UPPER REACHES OF THE THREE RIVERS ARE AERATED LAGOON/LAND TREATMENT FACILITIES.

THE PLAN STUDY SHOWED THAT, WHEN CONSIDERING LAND TREATMENT, IT WAS MORE COST EFFECTIVE TO UTILIZE AERATED LAGOONS FOR SECONDARY TREATMENT THAN TO EXPAND THE EXISTING ACTIVATED SLUDGE PLANTS FOR SECONDARY TREATMENT. THE OPTION IS STILL OPEN TO LOCAL COMMUNITIES, HOWEVER, TO USE THEIR SECONDARY TREATMENT PLANTS TO THE END OF THEIR USEFUL LIFE AND MOVE TO AERATED LAGOONS ONLY AS EXPANSIONS AND PLANT WEAR-OUTS REQUIRE. THERE IS ALSO THE OPTION TO EXPAND EXISTING ACTIVATED SLUDGE PLANTS FOR SECONDARY TREATMENT AND USE LAND APPLICATION ONLY FOR ADVANCED TREATMENT. HOWEVER, A DECISION TO RETAIN ACTIVATED SLUDGE SECONDARY TREATMENT WILL ADD TO THE COST.

IN PLAN B, PLANT SITE SELECTION WAS BASED UPON THE OBJECTIVE OF PROVIDING LAND TREATMENT WHERE APPROPRIATE SITES EXISTED IN REASONABLE PROXIMITY TO THE SMALLER PLANT LOCATIONS WITHIN THE THREE RIVERS WATERSHED AREA. THE LARGER ADVANCED BIOLOGICAL TREATMENT PLANTS WOULD BE SITED IN A MANNER IDENTICAL TO THAT IN THE NORTH-EAST OHIO WATER DEVELOPMENT PLAN.

SLIDE 19 OFF

SLIDE 20 ON

PLAN C PROVIDES FOR THE TRANSPORT OF WASTEWATER GENERATED WITHIN THE THREE RIVERS WATERSHED AREA TO A SUITABLE LAND TREATMENT AREA IN NORTH CENTRAL OHIO, AS WELL AS PROVIDING TREATMENT WITHIN THE THREE RIVERS WATERSHED.

ULTIMATELY, 81 PERCENT OF THE MUNICIPAL/INDUSTRIAL AND 74 PERCENT OF THE URBAN STORMWATER RUNOFF WOULD BE TREATED BY THE LAND TREATMENT TECHNOLOGY, WITH 69 PERCENT OF THE MUNICIPAL/INDUSTRIAL WASTEWATER AND 55 PERCENT OF THE STORMWATER RUNOFF BEING TRANSPORTED TO A SINGLE LAND TREATMENT SITE IN NORTH CENTRAL OHIO.

A TRANSMISSION TUNNEL CONVEYS WASTEWATER AND STORMWATER RUNOFF FROM THE CLEVELAND METROPOLITAN AREA TO THE NORTH CENTRAL OHIO AGRICULTURAL AREA. THE 183-SQUARE MILE WESTERN LAND TREATMENT SITE LIES IN PORTIONS OF HURON, SENECA, CRAWFORD, AND RICHLAND COUNTIES AS SHOWN. THE AKRON PLANT IS THE ONLY ADVANCED BIOLOGICAL TREATMENT PLANT. IT DISCHARGES PURIFIED WATER DIRECTLY TO THE CUYAHOGA RIVER. THIS TREATMENT PLANT WILL BE EXPANDED AND MODIFIED TO TREAT SEWAGE TO A LEVEL PERMITTING BODY CONTACT SPORTS IN THE CUYAHOGA RIVER. THE DISCHARGE FROM AKRON WILL INCREASE THE FLOW OF THE CUYAHOGA RIVER DURING LOW FLOW PERIODS. STREAMFLOW WILL ALSO BE AUGMENTED BY THE UPSTREAM LAND TREATMENT FACILITIES THAT SECONDARILY TREAT AND STORE WASTEWATER OVER THE WINTER AND APPLY THE TREATED WASTEWATER TO THE LAND DURING THE SUMMER WHEN NATURAL FLOWS ARE AT THEIR LOWEST LEVEL AND WHEN MUNICIPAL WITHDRAWALS CREATE THE MOST IMPACT.

ALTHOUGH PLAN C REPRESENTS A SIGNIFICANT DEPARTURE FROM TRADITIONAL WASTEWATER TREATMENT PRACTICES, ITS PHASING IS PROGRAMMED TO RECOGNIZE THE CURRENT LOCAL PLANNING AND EARLY PLANNING OF THE NORTHEAST OHIO WATER DEVELOPMENT PLAN. THE EVOLUTION FROM THE CURRENT TREATMENT PLANT SYSTEM TO THE ULTIMATE PLAN C CONFIGURATION WILL NOT BE CULMINATED UNTIL THE YEAR 2000. AS NOW ENVISIONED, NO LAND APPLICATION OF WASTEWATER IS NECESSARY PRIOR TO 1983. THE DECISION AS TO WHETHER THE NORTH CENTRAL OHIO LAND TREATMENT AREA IS CHOSEN CAN BE POSTPONED UNTIL 1980. IN THIS MANNER, FULL ADVANTAGE CAN BE TAKEN OF THE ACCUMULATING SCIENTIFIC DATA FROM VARIOUS RESEARCH AND DEMONSTRATION PROJECTS THROUGHOUT THE NATION.

PLAN C IS CURRENTLY CONFIGURED TO PROVIDE A LEAST COST ALTERNATIVE FOR COMPARISON WITH OTHER TECHNOLOGIES. PLAN C CANNOT BE IMPLEMENTED AS CONFIGURED, BUT SHOULD BE RECONFIGURED IN LIGHT OF THE CONCERNS OF THE CITIZENS OF NORTH CENTRAL OHIO IF IT IS EVER TO BE ACCEPTABLE.

SLIDE 20 OFF

BLANK SLIDE ON

TO FACILITATE PUBLIC EVALUATION OF THE ALTERNATIVES IMPACT TABLE AND PREFERENCE TABLES HAVE BEEN PROVIDED AS WELL AS CONCLUSIONS THE DISTRICT HAS DEVELOPED CONSIDERING ALL THE WORK AND PUBLIC INVOLVEMENT TO DATE. I WILL NOT TAKE TIME TO SHOW OR DISCUSS THE IMPACT TABLES OR PREFERENCE SETS. I WILL ANSWER QUESTIONS LATER CONCERNING THESE. I WOULD LIKE TO DISCUSS THE COSTS OF THE ALTERNATIVE PLANS, PUBLIC ACCEPTANCE TO DATE AND CONCLUSIONS.

BLANK SLIDE OFF

SLIDE 21 ON

THE COSTS OF THE PLANS AS CONFIGURED ARE SHOWN ON THIS CHART. NOTE THAT PLANS AI AND AII ARE THE SAME COST UNTIL AFTER 1980. THIS INDICATES THAT PLAN AII LOGICALLY GROWS OUT OF PLAN AI BY FURTHER ADDITION OF TREATMENT PROCESSES ON EXISTING PLANTS. THEREFORE, A DECISION ON PLAN A TO LEVEL II NEED NOT BE MADE UNTIL 1980. THE GROWTH IN ANNUAL AVERAGE COSTS FROM CURRENT PLANTS TO THE FINAL ALTERNATIVE IS DEMONSTRATED AS IS THE COST DIFFERENCE BETWEEN LEVEL I AND LEVEL II TREATMENT.

SLIDE 21 OFF

SLIDE 22 ON

TOTAL DECISION FLEXIBILITY IS INHERENT IN THIS PLANNING STUDY. THAT FLEXIBILITY IS DEMONSTRATED BY THIS CHART. I WOULD LIKE TO DISCUSS EACH DECISION POINT INDIVIDUALLY.

SLIDE 22 OFF

SLIDE 23 ON

FIRST, A DECISION TO GO TO PLAN A, LEVEL I, PLAN B, OR PLAN C, MUST BE MADE IN 1975.

IF PLAN C IS THE CHOICE, THE DECISION IS FINAL. THE COST OF GOING TO PLAN C IN 1975 VERSUS THE PLAN C AS CURRENTLY CONFIGURED ON AN AVERAGE ANNUAL BASIS IS \$16 MILLION PER YEAR FOR 50 YEARS. THERE ARE NO MAJOR PUBLIC CONCERNs THUS FAR EXPRESSED WITH THE ACCEPTABILITY OF PLAN B OR AI. SINCE THOSE PLANS CALL FOR ALL TREATMENT IN BASIN, THERE ARE NO MAJOR INSTITUTIONAL PROBLEMS. AN AGENCY SUCH AS THE THREE RIVERS

WATERSHED DISTRICT COULD BE GIVEN THE NECESSARY AUTHORITY AND RESPONSIBILITY TO EITHER MONITOR THE COMPLIANCE WITH AN OVERALL PLAN WITH EXECUTION BY LOCAL GOVERNMENTS OR BE GIVEN TOTAL RESPONSIBILITY FOR EXECUTION.

PLAN C HAS MET WITH THE PUBLIC CONCERN SHOWN ON THIS CHART.

SLIDE 23 OFF

SLIDE 24 ON

WE HAVE ADDRESSED EACH OF THESE CONCERNS IN THE REVIEW OF THESE
AND
PLANS WILL ADDRESS THEM IN DETAIL IN OUR DISCUSSIONS WITH THE PUBLIC IN
NORTH CENTRAL OHIO. WE HAVE ENGINEERING SOLUTIONS TO MOST OF THE CONCERNS
BUT THESE SOLUTIONS ADD TO THE COST OF PLAN C SUCH THAT IN MY VIEW
IT WILL NO LONGER BE THE LEAST COST OPTION BUT WILL BE APPROXIMATELY
EQUAL IN COST TO PLAN B. THEREFORE THE FINAL DECISION BETWEEN PLANS A,
B OR C WILL NOT BE MADE ON COST BUT IN THE MAIN BE MADE ON PUBLIC
ACCEPTABILITY, INSTITUTIONAL CONSTRAINTS, AND THE ABILITY TO REUSE THE
BY-PRODUCTS OF THE WASTEWATER SYSTEM. LAND TREATMENT DOES OFFER THE
BEST ABILITY TO RECYCLE THE BY-PRODUCTS IF CROPS ARE GROWN AND HARVESTED
ON THAT LAND. THE INSTITUTIONAL PROBLEM OF WHO OPERATES A SYSTEM SUCH AS
DEFINED IN PLAN C HAS NOT RECEIVED A GOOD SOLUTION.

WHETHER THE CITIZENS OF NORTH CENTRAL OHIO, GIVEN THE RECOMMENDED
ENGINEERING SOLUTIONS TO THESE CONCERNS WITHOUT DEMONSTRATING THEIR
EFFECTIVITY WITH ACTUAL DATA, WILL ACCEPT PLAN C IN 1975 WILL HAVE TO BE
DETERMINED IN THESE FINAL PUBLIC HEARINGS..

BASED ON OUR INITIAL PUBLIC HEARINGS, PUBLIC ACCEPTANCE BY THAT
PUBLIC OF TREATMENT OF CLEVELAND WASTEWATER ON NORTH CENTRAL OHIO

SOIL IS DOUBTFUL IN THE EARLY TIME FRAME IF NOT FOR SOME TIME TO COME. OUR LITERATURE SEARCH SHOWS THAT VERY LITTLE DATA EXISTS TO PROVE LAND SYSTEMS EFFECTIVITY FROM EXISTING PROJECTS IN REGIONS SIMILAR TO OHIO. THEREFORE, MUCH WORK IN MONITORING AND EVALUATION IS NEEDED TO CONVINCE THE CITIZENS OF THAT AREA. I WOULD SAY THAT THEY SEEM NOT TOTALLY OPPOSED TO THE LAND TREATMENT CONCEPT AS A SOLUTION TO THEIR OWN WASTE-WATER MANAGEMENT NEEDS IF PROPERLY DESIGNED AND PROVEN TO WORK.

SLIDE 24 OFF

SLIDE 25 ON

IF PLAN B WERE CHOSEN IN 1975, THE DECISION TO RETAIN PLAN B OR ACCEPT PLAN C CAN BE MADE IN 1980. PLAN A, OR AII WILL HAVE BEEN FOREGONE. THE ACCEPTABILITY OF PLAN C WILL AGAIN HAVE TO BE DETERMINED.

~~IF PLAN AI WERE THE 1975 CHOICE, ANY ALTERNATIVE TO INCLUDE PLAN AI"~~ SLIDE 25 OFF ← SLIDE 26 ON
CAN BE THE FINAL DECISION IN 1980. THIS COULD INCLUDE ALSO A MODIFICATION TO ACCEPT A PLAN BI WITH THE ADVANCED BIOLOGICAL/PHYSICAL CHEMICAL TREATMENT TO LEVEL I ONLY.

IN PLAN B OR C THE CONCERN'S OVER AERATED LAGOONS CAN BE RESOLVED WITH SUBSTITUTION OF ACTIVATED SLUDGE WITH AN ADDED COST ASSOCIATED THEREWITH. PLAN C ACCEPTABILITY STILL MUST BE DETERMINED.

SLIDE 26 OFF

SLIDE 27 ON

THE COST COMPARISONS ON AN ANNUAL AVERAGE COST BASIS FOR EACH POSSIBLE DECISION IS DISPLAYED HERE. YOU WILL NOTE, THE DELAY OF A FINAL DECISION TO GO TO ANY PLAN ; INCREASES THE COST OF THAT PLAN. FOR INSTANCE, IF ONE CHOSE PLAN B IN 1975 AND RETAINS PLAN B AS A FINAL ALTERNATIVE

THE ANNUAL COST IS \$244 MILLION. IF ONE PROCEEDS TO A FINAL DECISION ON PLAN B BY FIRST MAKING A DECISION TO GO TO PLAN A1 IN 1975, THE ANNUAL COST OF PLAN B IS \$258 MILLION. THIS DIFFERENCE IS ASSOCIATED WITH THE REQUIREMENT TO BUILD SECONDARY TREATMENT IN BASIN PRIOR TO 1977 TO MEET PL 92-500 GOAL AND THIS REQUIRES CONTINUATION OF THE ACTIVATED SLUDGE PLANTS. IN THE UPPER BASIN INSTEAD OF INITIALLY CONSTRUCTING THE AERATED LAGOONS SPECIFIED IN EARLY IMPLEMENTATION OF PLAN B. THE SAVINGS IN COST OF GOING TO PLAN C IN 1975 OVER THAT OF DELAYING THAT DECISION TO 1980 IS AS MUCH AS \$30 MILLION ANNUALLY.

IN CONCLUSION:

1. THE SUMMARIES OF THE IMPACTS OF THE FOUR ALTERNATIVE PLANS DISPLAYED IN THE PREFERENCE SETS THAT YOU HAVE PROVIDED THE PRELIMINARY BASIS FOR CHOICE AMONG THE ALTERNATIVES BY VARIOUS MEMBERS OF THE PUBLIC. THE PREFERENCE SETS PROVIDE DATA FROM WHICH A NUMBER OF CONCLUSIONS CAN BE DRAWN CONCERNING FUTURE DECISIONS.
2. A PROGRAM IS CURRENTLY UNDERWAY TO UPGRADE THE EXISTING INCINERATOR FACILITIES IN CLEVELAND. THE STATE MUST FOREGO THIS PLAN IF STRIPMINE APPLICATION IS THE PREFERRED OPTION FOR SLUDGE TREATMENT.
3. THE ENERGY AND CHEMICAL REQUIREMENTS FOR ANY OF THE FOUR PLANS ARE INCREASED OVER CURRENT CONSUMPTION. THIS IS ALSO TRUE OF MANPOWER NEEDS TO ADEQUATELY OPERATE THE SYSTEMS.
4. MANY INCIDENTAL BENEFITS ARE DERIVED FROM EACH OF THE ALTERNATIVE PLANS AND ARE DISCUSSED IN THE HANDOUT.

5. STORMWATER IS COLLECTED AND TREATED IN QUANTITIES SUFFICIENT TO ACCOMMODATE 97.3 PERCENT OF THE TOTAL AVERAGE ANNUAL 1.181A STORMWATER RUNOFF.

THE DECISION TO TREAT STORMWATER TO LEVEL I OR TO LEVEL II IS CRITICAL TO THE PLAN SELECTION DECISIONS. IF PLAN C IS SELECTED IN 1975, LEVEL II TREATMENT IS MORE COST EFFECTIVE, SINCE LAND TREATMENT ACCOMPLISHES LEVEL II TREATMENT. IF ANY OTHER PLAN IS CHOSEN IN 1975, THE DECISION AS TO LEVEL II TREATMENT OF STORMWATER CAN BE MADE IN 1980 ALONG WITH THE SELECTION AMONG THE PLANS. THIS ALLOWS TIME TO MONITOR STREAM QUALITY RESULTING FROM LEVEL I TREATMENT. IF IT IS DECIDED LEVEL I TREATMENT OF STORMWATER IS ADEQUATE, SIGNIFICANT SAVINGS CAN BE ACHIEVED. THIS CONCLUSION CAN AFFECT THE CHOICE OF PLANS IN 1980.

6. ACCESS TO LAND NECESSARY FOR THE LAND TREATMENT TECHNOLOGY MAY BE ACCOMPLISHED BY SEVERAL METHODS, INCLUDING PURCHASE, LEASE, EASEMENT AND COOPERATIVE AGREEMENTS. OF THESE OPTIONS, PURCHASE IS THE LEAST DESIRABLE.

7. THE SYSTEMS CONFIGURED IN PLAN A-I, A-II, and PLAN B CAN BE MANAGED BY AN EXISTING GOVERNMENTAL ENTITY SUCH AS THE THREE RIVERS WATERSHED DISTRICT SINCE THE TOTAL SYSTEM IS WITHIN THE BASIN. PLAN C PRESENTS A VERY DIFFICULT INSTITUTIONAL PROBLEM SINCE THE CONFIGURATION OF THE SYSTEM DEFINED BY THAT PLAN ENCOMPASSES MANY COUNTIES AND MANY WATERSHEDS. THIS PLAN WOULD CALL FOR STATE CONTROL OR A SPECIAL GOVERNMENTAL AGENCY TO OPERATE IT.

8. IF PROJECTS ARE CONSTRUCTED PRIOR TO 1975, THEY CAN BE MONITORED TO OBTAIN VERIFICATION OF THE DESIGN CRITERIA AS WELL AS MEASUREMENT OF THE BENEFITS ACHIEVED. THIS WOULD INSURE THAT WELL-INFORMED DECISIONS ARE MADE AT THOSE CRITICAL DATES PREVIOUSLY IDENTIFIED AND THAT THE

PUBLIC CONCERNS AND ENGINEERING PROBLEMS CAN BE RESOLVED IN THE DESIGN STAGE.

9. EARLY IMPLEMENTATION AND CONSTRUCTION OF COMPONENTS OF THE VARIOUS PLANS WOULD PROVIDE EXPERIENCE NECESSARY FOR THE DECISIONS THAT MUST EVENTUALLY BE MADE BY STATE AND LOCAL OFFICIALS IN OHIO IN CHOOSING FROM AMONG THE ALTERNATIVE PLANS AND/OR THEIR COMPONENTS. THESE PROGRAMS TO INCLUDE PROGRAMS FOR TREATMENT OF WASTEWATER GENERATED IN THE NORTH CENTRAL OHIO AREA ARE LISTED IN YOUR HANDOUT.

10. THE EXECUTION OF ANY PLAN OR COMPONENT THEREOF SHOULD BE LEFT TO THE DECISION OF STATE AND LOCAL GOVERNMENTS AND THE PUBLIC AT LARGE. THE EARLY IMPLEMENTATION FEATURES :

SHOULD BE FULLY COORDINATED WITH APPROPRIATE LOCAL, STATE, AND FEDERAL AGENCIES..

11. ALTHOUGH LOCAL GOVERNMENTS AND THE CITIZENS OF NORTH CENTRAL OHIO HAVE EXPRESSED OPPOSITION TO PLANC, THEY HAVE NOT EXCLUDED THE LAND TREATMENT TECHNOLOGY FROM CONSIDERATION FOR TREATING THEIR OWN WASTEWATER.

12. THE ASSUMPTION AND PROJECTIONS OF DATA INCLUDED IN ANY PLANNING STUDY MUST BE CAREFULLY MONITORED AS THE FUTURE UNFOLDS. CHANGES IN EITHER THE ASSUMPTIONS OR PROJECTIONS WILL CHANGE PORTIONS OF THE PLANS. THIS IS THE MAJOR REASON FOR PROVIDING A MULTIPLE MEANS APPROACH AND FOR RETAINING FLEXIBILITY FOR THE DECISION PROCESS RELATING TO WASTEWATER MANAGEMENT IN THE THREE RIVERS WATERSHED AREA.

13. ANY RECOMMENDATIONS EMANATING FROM THIS STUDY MUST BE MADE BY THE STATE OF OHIO.

SLIDE 27 OFF

SLIDE 28 ON

I INVITE YOUR WRITTEN REVIEW OF THIS PLANNING EFFORT. YOUR COMMENTS WILL BE CONSIDERED IN THE FINAL REPORT WHICH IS SCHEDULED FOR PUBLICATION IN AUGUST, AND THEY WILL BE REPORTED IN A SPECIAL APPENDIX DEVOTED ENTIRELY

TO THE COMMENTS ON THE DRAFT REPORT. YOU MUST REALIZE THAT CHANGES HAVE
ALREADY BEEN MADE TO THAT DRAFT. SOME HAVE BEEN PRESENTED TONIGHT.
WE NEED PUBLIC EXPRESSION OF PREFERENCE OF ANY OR ALL PLANS OR COMPONENTS
THEREOF PRIOR TO 15 JULY 1973 TO MEET OUR FINAL PUBLICATION DATE OF
1 AUGUST 1973.

THE ADDRESSES APPEARING ON THIS SLIDE ARE IN YOUR HANDOUT.

SLIDE 28 OFF

Exhibit 2

STATEMENT BY THE CENTRAL AREA COMMITTEE OF
THE LAKE ERIE BASIN COMMITTEE OF THE LEAGUE OF WOMEN VOTERS
TO THE U.S. ARMY CORPS OF ENGINEERS
ON THE WASTE WATER MANAGEMENT STUDY DRAFT FOR THE
CLEVELAND-AKRON METROPOLITAN AND THREE RIVERS WATERSHED AREAS
GIVEN AT THE PUBLIC HEARINGS AT PUNDERSON STATE PARK
JUNE 5, 1973

Statement by Mrs. Henrik Kylin, vice-chairman, Central Area Committee
for Mrs. William M. Hutchison, Chairman, Central Area Committee

As the modern concepts of land treatment with wastewater of secondary purity have developed, the League of Women Voters of the Central Area of the Lake Erie Basin Committee have been greatly impressed by them because they are methods of recycling nutrients and conserving costly chemicals while reaching highest levels of waste water quality. Though the idea is old in agricultural practices, the methods are new and challenging. Regional and watershed planning and management are of great concern to us also.

The four plans which the Army Corps of Engineers presents here are detailed and thought-provoking. After considering the costs, the probability of acceptance by the public, and the institutional problems presented by the many counties and municipalities involved, we favor Plan B for the following reasons.

Plan B reaches both level II quality and the intent and time phasⁱ goals of Public Law 92-500 while it keeps the water within the Three Rivers Watershed. This second plan relieves some institutional problems by lessening the numbers of political entities involved and by remaining within the areas where the waste is generated. Consequently it has more likelihood of being implemented within the necessary time limits.

Though the average annual cost of Plan B is greater for the Three Rivers Watershed taxpayers than Plan C, it is less than for Plan AII. Plan B is less costly than either AII or C for the Federal

STATEMENT TO THE ARMY CORPS OF ENGINEERS page 2

taxpayer. Plan B costs less than either AII or C for local and federal construction costs at present values. After these comparisons we feel that Plan B is a lower cost method for meeting the water quality we strongly support.

Available land and plans for the land are two vital concerns in any future development. Ohio has not developed a master plan for the land use of the state or for this area. Can we claim the amount of land needed for Plan C before an overall plan is developed? The area in North Central Ohio is predominately agricultural now, but will that be the best use for the area in the years to come? If Plan C is adopted, very close land use planning with other departments in the state would be a vital necessity.

If Plan B is adopted, it would keep as much land in agriculture in the study area as would normally remain in that use. It would even aid local governments in keeping the necessary open space areas needed for good land use distribution. In the siting of the land treatment areas attention to the aesthetic values and the feelings of area residents should be considered carefully because the planned treatment sections of the watersheds are becoming more densely populated.

By developing agreements with the farmers the land could remain on the tax duplicate without becoming a burden for the farmers. This last consideration is of vital concern in several counties in the area. As an example, Portage County has 38% of the land off the tax duplicate now, with the 25,000 acre Ravenna Arsenal and West Branch Reservoir, to name only two tax-free areas. The county cannot afford to lose more land to the tax free category.

Two other major considerations in selecting the plans are the chemical demands and the power--electricity-- needed. Plan C needs only about 2/5 the chemical consumption of Plan B and Plan B needs 5/6 of the chemical quantities of Plan AII. However, Plan C needs over two times the amount of electricity that Plan B does and Plan AII needs power in the ratio of 2½ to 3 compared with Plan B. Unless Plan C actually had safety-proven nuclear power plants on site this power demand would be a very great drawback. The Central Area Committee favors Plan B for its emphasis on conservation of resources.

A serious problem in the lower reaches of the rivers is flooding at times and in the upper reaches is the low flow during summer months, especially on the Cuyahoga River. In studying the plans we noted that one result of Plan C would be flooding problems in the lower reaches of the Huron River due to quantities of land treatment water drained into the river. A big advantage of Plan B in the Three Rivers Area would be the replenishment of ground water for public and private wells in the area and the low flow augmentation of the rivers and streams. This would improve water quality in the rivers in their entirety.

The use of sludge on agricultural lands and strip-mined areas is excellent. Not all of this needs to be taken out of the Three Rivers Area if Plan B is adopted. There are some strip-mined areas within the involved counties, although they are in the Mahoning River Watershed. There are many sand and gravel operations within the Plan B area which could be reclaimed with this sludge and have an entirely new revenue life for the land owners either in open space uses or as residential areas. An excellent example of this is the Brugmann Sand and Gravel, Inc. in Mantua Township. In the areas which have been worked they have established a beautiful residential section, with lakes and a rolling terrain. The lakes and former silting basin, with the fish and migrating wildlife, give a perfect example of recreational and open space uses as well as residential possibilities.

Since the final construction for land use treatment does not need to be ready until 1980, pilot projects would prove or disprove the feasibility of the methods and should be developed. There are several areas to be considered other than the ones mentioned in the draft for pilot projects in the Three Rivers Area. Mantua is in the study area and close to some suitable land. The Streetsboro-Shalersville section might prove a good pilot area. The Hiram-Garrettsville area would be a good pilot area; though it is in the Mahoning River watershed it could prove the feasibility for Portage County as well as for the Ohio River Basin.

STATEMENT TO THE ARMY CORPS OF ENGINEERS Page 4

We feel that several pilot projects will provide firm data on which to base final decisions, that they are necessary, and should be developed as rapidly as possible.

We strongly support recycling nutrients and reaching high stream water quality by the most realistic and economical methods that can be developed. Plan B, by using existing plants and those under construction in the process of converting to land treatment in the specified areas, is practical and economical use of facilities.

Thank you for the opportunity to testify.



hydrology
geology
ecology

June 4, 1973

Exhibit
3

Earthview Inc
environmental
scientists

Mr. Arthur F. Woldorf
Watershed Planning
Ohio Department of Natural Resources
65 South Front Street, Room 805
Columbus, Ohio 43215

Dear Mr. Woldorf:

Re: Draft - Wastewater Management Study
Three Rivers Watershed Areas

As I will be unable to attend the public meetings, I am taking this opportunity to submit my comments in writing. These comments are based on the Summary Report dated May, 1973, without benefit of the supporting appendices.

My first comment is that I am impressed with the scope of the report, and feel that regional wastewater planning and management clearly represents the direction we should be taking. Use of the watersheds as the regional planning unit also appears to be the correct approach. I support these approaches, not so much from an economy of scale, but because this is the only approach that can be successful if our management is to be tied to water quality impact rather than arbitrary standards.

With regard to impact, I feel that the Corps of Engineers should be commended for their attempt to categorize and evaluate impact. To my knowledge, their impact evaluation goes well beyond anything that has been done at the state or local level. However, because of the large scope of this project and the lack of base line information, and predictive methodology, the evaluation performed is still not adequate. This is not a criticism, only an observation.

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WATER PLANNER

316 olton Building / Madison & Erie / Toledo, Ohio 43624 419/241-3344

June 4, 1973

Based on inadequate impact evaluation, I believe two substantial conclusions can be made.

- (1) The designed alternatives may meet the water quality standards on which they are based but fail to meet recognized water quality goals. This has already been alluded to by Mr. Thomas Watkins, Three Rivers Watershed District.
- (2) The management plans need to be implemented on a scale that permits a monitoring program to document cause and effect, giving justification to greater implementation, or substantial modification.

I would like to strongly emphasize the need for a monitoring program to document the impact of such wastewater management. For too long the State of Ohio has operated on the belief that wastewater management based on standards will suffice. Let us use this opportunity to prove or disprove that contention. With reference to standards, I was particularly impressed by a comment from Mr. Martin Lang, Wastewater Commission, City of New York, who said: "The ecology of a stream doesn't know what you took out, only what you put in." Until we can predictively relate what we put in to the ecology, we are plainly shooting in the dark.

I believe the comprehensive scope of the draft study, for example, treatment of urban runoff water, portends much for the State of Ohio. Situated in the Toledo area, as I am, I sense an uneasiness here over the future consequences of such a comprehensive program. I personally believe that urban runoff water does require treatment, following full use of the assimilation capacity of local streams, and in accordance with local stream water use or goals. However, there are other more important wastewater priorities, such as elimination or treatment of combined sewer flows.

The draft study lays it on the line to the State of Ohio and says what are your priorities and what are you going to do? The State must now provide leadership. Are we going into storm water treatment or aren't we? If the State has insufficient knowledge to make that decision, then the Three Rivers Watershed plans offer the opportunity to find out.

Mr. Arthur F. Woldorf

3

June 4, 1973

Finally, I feel that land disposal, on something more than a pilot basis, is of utmost necessity. The concept makes sense and must be encouraged. I urge the state to use every effort to encourage the adoption of an alternative with land disposal of wastewater.

Thank you for your attention and the opportunity to offer these general comments.

Sincerely,

EARTHVIEW, INC.



George R. Kunkle, Ph.D.

mk

D:D M:T
Read
NO EXHIBIT

My name is Leonard Schnell. I am testifying this evening in two capacities.

First, as president of the Ohio Farm Bureau Federation, a general farm organization representing over 56,000 families in Ohio, and second, as a farmer extremely interested in a study of this type and magnitude.

On behalf of the Ohio Farm Bureau, I express our appreciation for this opportunity to react to the summary report and to share with you some of our questions and concerns as farmers.

We appreciate the serious and complex problems associated with attempting to provide adequate waste management systems necessary to properly treat the staggering volume of sewage generated by our metropolitan centers. We, likewise, concur with the need for taking aggressive and positive steps toward improving the quality of our lakes and streams. The deterioration of Lake Erie and its surrounding tributaries has brought recognition to Ohio that should make all of us feel less than proud.

Those of us in the business of farming have a great deal of respect for prudent stewardship of our natural resources since our success or failure is so closely linked with the wise use of one of our most valuable resources -- land.

Page Two

It is our understanding that this summary report prepared by the U. S. Corps of Army Engineers is an engineering study only, examining from that point the feasibility of several potential solutions to the problem. It is our further understanding that similar studies have been approved for four other locations across the United States.

Therefore, it appears these so called "pilot studies" are of particular importance because we are attempting to find solutions not only for these five areas, but possibly to set precedents to be followed by a large number of metropolitan areas in the years to come. Several such metropolitan areas are in other areas of Ohio.

Since this has the potential of affecting millions of people, and thousands upon thousands of acres, we are concerned with several questions that appear to be unanswered at this time.

What input or planned input is forthcoming to answer the multitude of questions raised regarding the huge underground tunnel proposed in Plan C?

It is difficult to believe a project of this type would not affect the underground water supplies of those between Cleveland and N.C. Ohio. What evidence can we look toward to answer these vital questions? Are geologists and

Page Three

other land specialists to be involved in any further recommendations?

At a time when daily headlines reflect a growing concern over the "energy crises" it seems logical to be concerned with any solution which would require 50% more energy as in Plan C compared to the other alternatives.

Recently, we have seen the public concern resulting from the short supply of red meat in this nation. I am not implying that we are going to need every acre of ground for food production within the next 5 to 10, or even 20 years. However, I do believe it is a factor that must be considered when measuring a proposal that would involve so much land as alternative C. Under this plan, it is our understanding somewhere in the vicinity of 180 thousand acres would be affected. Although a large percent of this would not be taken out of production, the cropping patterns, likely, would be drastically altered.

Although there has been considerable discussion regarding the fertilizer content of the wastewater, several pertinent questions remain, among which are these: 1) who would assume the liability if pollutants end up in the water? 2) what effect will the added saline and mineral content of such solutions have on the productive capacity of the land?

Last, but certainly not least, is the question of an individual's rights.

Is it right for people to be moved in large numbers from their homes and farms

Page Four

to help solve the problems of a large metropolitan center? Is it right for farmers to be forced to other types of production and lose direct control of their land to solve problems of a city a hundred miles away?

I believe the entire situation would take on an entirely different perspective if there were no other alternatives available, i.e., biological and physical-chemical treatment in basins.

On April 12, 1973 the Ohio Farm Bureau released a statement to the press regarding the three rivers area study. In that statement, Executive Vice President, C. William Swank stated and I quote, "Farm Bureau will oppose any solution to metropolitan sewage disposal problems that adversely affects farmers." Although this alternative may be feasible from Cleveland's point of view, it is not desirable unless two conditions are met.

"First, it must cause minimal disruption to the rural communities affected; second, the benefits must satisfy the individual farmers whose land would be used."

In summary, I believe this statement still reflects the policy of the OFBF toward the overall project. We will continue to stand in opposition until, by use of research and pilot projects, there can be demonstrated effective waste management commensurate with costs involved and acceptable social impact on communities involved.

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DEPARTMENT OF THE ARMY
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York, 14207

PUBLIC MEETING
ON THE
WASTEWATER MANAGEMENT STUDY
FOR CLEVELAND-AKRON
METROPOLITAN THREE RIVERS
WATERSHED AREAS
Held at Willard High School
123 West Whisler Drive
Willard, Ohio
on
6 June 1973
at
7:30 p.m.
COLONEL ROBERT L. MOORE, Presiding

1
2 DEPARTMENT OF THE ARMY
3 Buffalo, District, Corps of Engineers
4 1776 Niagara Street
5 Buffalo, New York 14207

6
7 PUBLIC MEETING
8
9 ON THE
10 WASTEWATER MANAGEMENT STUDY
11 FOR CLEVELAND-AKRON
12 METROPOLITAN THREE RIVERS
13 WATERSHED AREAS
14 Held at Willard High School
15 123 West Whisler Drive
16 Willard, Ohio
17 On
18 6 June 1973
19 at
20 7:30 p.m.

21 PRESENT:

22 COLONEL ROBERT L. MOORE, District Engineer, U. S. Army
23 Engineer District, Buffalo, NY 14207
24 ARTHUR WOLDORF, Ohio Department of Natural Resources,
25 Columbus, Ohio
26 LARRY ZITZKE, Ohio Environmental Protection Agency,
27 Columbus, Ohio

- 1
2 ACKERMAN, ELDON, MR. & MRS., New Washington, Ohio,
Grocery employee
3
4 ACKERMAN, J. RICHARD, 541 W. Mansfield Street,
New Washington, Ohio, New Washington Council
5
6 ACKERMAN, ROGER J., RR #1, New Washington, Ohio,
Farmer
7
8 AICHHOLZ, GLENN H., RR #2 Attica, Ohio 44807,
Farmer & Venice Township Trustee
9
10 AICHHOLZ, RONALD A., RR #1, New Washington, Ohio,
Plumbing & Electric Owner
11
12 AKIRIAN, D., 759 Carinal Drive, Holiday Lakes, Willard, Ohio,
Retired
13
14 ALLGYRE, EARL F., RR #2, Bloomville, Ohio,
Farmer
15
16 ALT, URBAN, RFD #1, Tiro, Ohio
Farmer
17
18 ANDERSON, F. X., 207 S. Poplar Street, Bucyrus, Ohio,
Service, Safety Director
19
20 ARNDT, Howard, RR #3, Shelby, Ohio,
Owner, Richland Chemical Company
21
22 BAKER, DR. DAVID B., River Studies Laboratory, Heidelberg.
College, Tiffin, Ohio, Associate Professor
23
24 BALL, C., Attica, Ohio, Fire Chief
25
26 BAUER, CLAUDE A., RD #1, Willard, Ohio
Farmer
27
28 BAUER, PAUL F., RR #1, Crestline, Ohio 44827,
Farmer
29
30 BAUER, WILLIAM S., RR #1, Crestline, Ohio,
Farmer, Township Trustee & Clerk
31
32 BAUMANN, LAWRENCE, RR #2, Amherst, Ohio 44001,
Farmer

- 2 BAXTER, WILLARD, Rt. #2, Willard, Ohio,
Farmer
- 3 BEACH, WILBUR, Box 1, Chatfield, Ohio
Hardware Co-owner
- 4 BEAT, HAROLD M., RR #2, Attica, Ohio
Farmer
- 5 BECK, JERRY, Rt. #1, Collins, Ohio 44826,
U. S. Dept. of Agriculture
- 6 BLUM, FRANK, Rt. #2, Attica, Ohio
Retired
- 7 BORDNER, ROBERT, New Washington, Ohio 44854
Editor, New Washington Herald
- 8 BOWER, RICHARD M., 554 Kennedy Drive, Willard, Ohio 44890
Clergyman
- 9 BRADRICK, DONALD A., R. I. Tiro, Ohio, 44887
Operating Engineer Ohio State Reformatory
- 10 BUCKINGHAM, LEE., RR #2, Willard, Ohio
Farmer
- 11 BURGER, EDWARD J., MRS., RR #1, Tiro, Ohio
Homemaker
- 12 BUURMA, JOHN JR., RR #2, Willard, Ohio 44890
Farmer
- 13 CAPELL, ARTHUR, MR. & MRS., RR #2, Attica, Ohio
Farmer
- 14 CLARK, ROSELLEN, 155 Coe Street, Tiffin, Ohio 44883
Teacher
- 15 CLARK, ROSS E., RR #2, Attica, Ohio 44807
Farmer
- 16 CLOUSE, CARL, RR #1, New Riegel, Ohio
Farmer
- 17 COK, BEN., RR #2, Willard, Ohio,
Retired

- 1 COLE, DANIEL, MRS., RD #1, Crestline, Box 160, Ohio 44821
2 Homemaker & Teacher
- 3 COLE, DANIEL, Box 160, RD #1, Crestline, Ohio 44827
4 Farmer
- 5 COLE, GARRY D., RR #3, Shelby, Ohio 44875
6 Engineer, Floyd G.Browne & Associates, Ltd.
- 7 COLE, GARY A., RD #1, Crestline, Ohio
8 Earth Science Teacher, Shelby City School
- 9 COLE, JAMES M., RR #1, Crestline, Ohio
10 Sales Dept., Ohio Brass & Farmer
- 11 COLE, SHIRLEY J., Rt. #1, Crestline, Ohio
12 Secretary, AMF, Inc., & Housewife
- 13 COLE, VERNE R., RR #3, Shelby, Ohio
14 Campground Owner & Farmer
- 15 COLE, VERNE R., MRS., RR #3, Shelby, Ohio,
16 Housewife
- 17 COLE, VICKI J., RR #3, Shelby, Ohio
18 Teacher, Bucyrus City Schools
- 19 CONWAY, JANET N., RD #2, Norwalk, Ohio 44857
20 Reporter, Norwalk Reflector
- 21 COOLEY, HAROLD SR., MRS., Rt. #1, Bloomville, Ohio
22 Farmer
- 23 COOPER, IVAN, Box 235, LaRue, Ohio
24 Director of Farm Programs, Ohio Farm Bureau
- 25 COULTER, RUSSEL, Rt. #3, Galion, Ohio
26 Self-employed
- 27 COWLING, NOEL S., Rt. #3, Willard, Ohio
28 Farmer
- 29 CRAMER, EARL, RR #1, New Washington, Ohio
30 Farmer
- 31 CRAMER, ROLAND, Rt. #1, Tiro, Ohio 44887
32 Farmer

- CRAMER, VIRGIL B., MRS., RR #2, Attica, Ohio
Housewife
- CRAMER, VIRGIL, RR #2, Attica, Ohio 44807
Farmer
- CRUM, DONALD, RR #1, New Washington, Ohio
Farmer
- CUNITZ, GEORGE R., 461 Fairoaks Blvd., Mansfield, Ohio 44907
City Engineer, City of Mansfield
- DAMSCHRODER, GENE, Columbus, Ohio
State Representative, 85 District
- DANIEL, C. F., RR #3, Willard, Ohio
Farmer
- DANIEL, HERMAN, RR #3, Willard, Ohio
Farmer
- DANIEL, MILTON D., RR #3, Willard, Ohio 44890
Mail Carrier
- DAWSON, ALTA, RR #2, Willard, Ohio
Farm owner
- DICK, CLARENCE, RR #3, Shelby, Ohio
Farmer
- DICK, DUANE, RR #3, Shelby, Ohio
Farmer
- DEVORE, RUSSELL, RR #2, Remlinger Road, Crestline, Ohio
Laborer
- DELARBER, JOHN, RR #1, New Washington, Ohio
Farmer
- DETERMAN, CHRIS E., Rt. #2, Attica, Ohio
Carpenter
- DIGBY, SHEILA, MRS., 218 Melmore Street, Tiffin, Ohio
Housewife

- 2 DILLON, HELEN A., RD #1, Plymouth, Ohio
Homemaker
- 3 DUNHAM, CURT, 309 Cottswold Drive, Delaware, Ohio
Ohio Farm Bureau
- 5 ECKSTEIN, ROSS, RR #1, New Washington, Ohio
Farmer
- 6 EIDLE, W. W., RR #2, Willard, Ohio
Retired
- 8 EHRMAN, RUSSELL, RR #1, Tiro, Ohio
Farmer
- 10 EITLE, PEARL, RR #2
Housewife
- 11 ELLETT, CLARENCE R., 40 Old State Road, N., Norwalk, Ohio
Deputy Health Commissioner
- 12 EMERY, JOHN V., 52 Hillcrest Drive, Willard, Ohio
Physician
- 14 ENDERS, ELDON E., MR. & MRS., RR #2, Box 219, Attica, Ohio
General Electric employee
- 15 ENDERS, KENNETH, RFD #2, Attica, Ohio
- 17 ERVIN, WILLIAM, Shelby, Ohio
Farmer
- 18 EUBANKS, SHANNON, PO Box 211, Norwalk, Ohio
Reporter, Elyria Chronicle-Telegram
- 20 FALTER, BERNARD, Bloomville, Ohio
Farmer
- 21 FALTER, VINCENT B., RR #2, Box 242, Bloomville, Ohio
Farmer
- 23 FANKHAGGER, WESLEY, Rt. #5, Box 5060, Bucyrus, Ohio
Farmer

- 1
2 FAST, DELBERT L., 204 Shaw Farm Road, Holliston, Mass.,
Electrical Engineer
3
4 FAST, MILDRED L., RR #2, Attica, Ohio
Farmer
5
6 FEICHTNER, BOB., RR #1, New Washington, Ohio
Shopworker and Part-time farmer
7
8 FENKER, GEORGE C., 20940 Valley Forge Drive, Fairview Park,
Ohio, Euthenics, Inc.
9
10 FENNER, FRANK C., R #1, Plymouth, Ohio
Farmer
11
12 FIKE, ROBERT, RR #5, Bucyrus, Ohio
Township Clerk & Farmer
13
14 FISHER, V. P., RR #1, Crestline, Ohio
Farmer & Shop, Township Clerk
15
16 FOX, RUTH, MRS., Rt. #3, h rd, Ohio
17
18 FRAZEE, DOUG, 664 S. Gamble, Shelby, Ohio
Student
19
20 FRAZEE, FLOYD R., 664 S. Gamble Rd., Shelby, Ohio
Machinist and Farmer
21
22 FRENCH, ROBERT H., Wakeman, Ohio
Farmer
23
24 GAESER, K. H., 109 W. Laurel, Willard, Ohio
Retired
25
26 GEISSMAN, BURTON J., RR #1, New Washington, Ohio
Farmer
27
28 GEISSMEN, EDDIE, RR #2, Bloomville, Ohio
Farmer
29
30 GEISSMAN, ROBERT A., RR #1, New Washington, Ohio
Farmer
31
32 GELSANLITER, KENNETH, RFD #5, Box 327B, Ashland, Ohio 44805
Consulting Civil Engineer & Surveyor

- 2 GERBER, CHARLES, Rt. #3, Holiday Lakes, Ohio
Tool & Die Johnson Corp.
- 3 GETZ, RICHARD F., 1350 W. 5th Avenue, Columbus, Ohio
Associate Editor, The Ohio Farmer
- 5 GIESER, KARL, MRS., 109 W. Laurel Street,
Homemaker
- 6 GIBBS, LUTHER, 2912 CR 265, Fremont, Ohio 43420
Farmer
- 8 GLOVER, TERRY,
Associate Professor, Dept of Economics, Ohio State Univ.
- 11 GREEN, WILBUR, 510 East Main, New Washington, Ohio
Compositor, Herald Printing Company
- 11 HAHLER, HOWARD, RR #3, Willard, Ohio
Farmer
- 12 HALL, M. W., RR #4, Tiffin, Ohio
Fertilizer Sales, Plant Life Attica
- 14 HANES, FREEMAN D., RR #2, Bloomville, Ohio
Farmer
- 15 HANSEN, WALTER, Bellmont, Ohio
Farmer
- 17 HARER, DALE E., Rd #2, Bloomville, Ohio
Farmer
- 18 HARER, HELEN I., Bloomville, Ohio 44818
Landowner
- 20 HARRER, HERBERT, New Washington, Ohio
Farmer
- 21 HARRER, ROBERT, Rt. #1, New Washington, Ohio 44854
Farmer
- 23 HAWK, DOROTHY, 93 East Main Street, Shelby, Ohio
News Editor, Daily Globe Newspaper

- 2 HAWK, JAMES, Rt. #1, Plymouth, Ohio 44865
Farmer
- 3 HAWK, KENNETH E., RR #1, Plymouth, Ohio
Farmer
- 5 HAWK, CHRISTINE, MRS., Rt. #1, Box 226, Plymouth, Ohio
Teacher
- 6 HAWK, LULA, RR #1, Plymouth, Ohio 44865
Housewife
- 8 HEATH, ROBERT L., 137 Harkness Street, Bellevue, Ohio 44811
Chemist, N&W Ry Co.
- 10 HELMSTETTER, R.J., MRS., Rd. #3, Norwalk, Ohio
Housewife
- 11 HOME, H.C., MR. & MRS., Rt. #1, Willard, Ohio
Retired
- 12 HEINRICHS, C. J., 303 A. Main, Attica
- 13 HELMSTETTER, RALPH J., Rd. #3, Norwalk, Ohio
Manager, Farm Chemical Ser.
- 15 HEYDINGER, ARTHUR W., RR #1, New Washington, Ohio 44854
Farmer
- 17 HEYDINGER, GLENN E., RR #1, New Washington, Ohio
Superintendent, Cranberry Hills Golf Course
- 18 HEYDINGER, GILBERT, RR #1, New Washington, Ohio
Stationary Engineer & Farmer
- 20 HEYDINGER, HAROLD, Rt. #1, New Washington, Ohio
Farmer Trustee
- 21 HEYDINGER, HERBERT, Farmer, Auburn Township Trustee
- 22 HEYDINGER, WILLIAM, RR #1, Farmer
- 23 HOCKER, JOHN E., Medina, Ohio
Dist. Conservationist

- 1
2 INDOE, MILDRED, Rd. #1, Willard, Ohio
3 Retired
4
5 JAYNES, HELEN M. & R. MICHAEL, 204-1/2 E. Main Street, Box 104
6 Housewife & Meatcutter
7
8 JONES, TOM, 4702 Paradise Road, Medina, Ohio
9 Engineer, Soil Conservation Service
10
11 JONES, ROBERT T. JR., RR #3, Box 227, Tiffin, Ohio
12 Farmer
13
14 KALB, WILBUR, New Washington, Ohio
15 Farmer
16
17 KALB, HAROLD A., RR #1, New Washington, Ohio
18 Farmer
19
20 KALB, JASON, RR #1, New Washington, Ohio
21 Farmer
22
23 KAPLE, CHARLES, RR #1, New Washington, Ohio
24 Farmer
25
26 KAPLE, DORIS M., RR #1, New Washington, Ohio
27 Farmer
28
29 KARL, CLARENCE, Tiro, Ohio 44887
30 Farmer
31
32 KARL, EDWARD V., RR #1, Tiro, Ohio
33 Farmer
34
35 KARL, KENNETH, RR #1, Plymouth, Ohio
36 Factory & Farmer
37
38 KARL, LOUIS A., RR #1, Tiro, Ohio
39 Farmer
40
41 KARL, THERESA, Rd. #1, Tiro, Ohio
42 Housewife
43
44 KARL, VINCENT, Tiro, Ohio
45 Farmer
46

- 1 KARL, ORVILLA, Rt. #1, Tiro, Ohio 44887
Housewife
- 2 KARL, DENNIS, Rt. #1, Tiro, Ohio
Farmer-Printer
- 3 KARL, RONALD, RR #1, Plymouth, Ohio
Computer operator
- 4 KARL, WALTER, Tiro, Ohio
- 5 KEHRES, LEONARD,MRS., RR #1, Tiro, Ohio
- 6 KEHF , LEONARD, RR #1, Tiro, Ohio
Farmer
- 7 KELBLER, MARION C., RR #2, Tiffin, Ohio
Farmer
- 8 KEMPER, JOHN W., West Salem, Ohio
Teacher - Ashland Board of Education
- 9 KEMP, LOLA A., RR #2, Willard, Ohio 44890
Teacher-Landowner
- 10 KESTNER, PAUL A., RR #5, Box 181, Ashland, Ohio
Farmer
- 11 KETCHAM, HALDON C. , 304 Dale Avenue
Maint. Electrician
- 12 KIMMET, A.M., New Riegel, Ohio
Farmer
- 13 KIRGIS, DAVID J., RR #2, Bloomville, Ohio
Farmer
- 14 KIRGIS, DOUGLAS E., RR #2, Bloomville, Ohio 44818
- 15 KLEINAN, BILL, Courthouse, Bucyrus, Ohio
Co. Agt.
- 16 KRAFT, HERBERT, 415 Jeffrey Drive, New Washington, Ohio
Salesman, Moorman Teed

- 2 KRAFT, LORIN, New Washington, Ohio
Farmer
- 3 KREBS, CLARAMAE, RR #1, New Washington, Ohio
Housewife
- 5 KREBS, NEIL E., RR #1, New Washington, Ohio
District Sales Manager, Moorman Mfg. Co.
- 6 KREENIN, RICHARD, RR #1, New Washington, Ohio 44854
Mechanic
- 8 LEUTHOLD, OSCAR, RR #4, Box 4093, Bucyrus, Ohio
Farmer
- 9 LIEZERT, CLINTON W., 4042 E. Smith Road, Medina, Ohio 44256
Civil Engineer
- 11 LINDER, RONALD M., MR. & MRS., Rt. #1, Norwalk, Ohio
Farmer
- 12 LINK, FREDERICK, RR #1, Attica, Ohio
Farmer
- 14 LINK, MILTON, PO Box 191, Republic, Ohio
Seneca S.W.C.D.
- 15 LONG, HARVEY M., RR #5, Bucyrus, Ohio, Box 5239
Farmer
- 17 LYNCH, BETTY, RR #1, Plymouth, Ohio
Insurance Auditor
- 18 LYNCH, PEARL, Rd. #1, Plymouth, Ohio
Farmer
- 20 LUCIUS, KENNETH, RR 31, Tiro, Ohio
Farmer
- 21 MADDOCKS, LEE M., 221 W. Laurel, Willard, Ohio
Division Director, R.R. Donnelley & Sons Co.
- 23 MANN, MRS. FLORENCE, Tiro, Ohio
- 24 MARQUART, ROGER, RR #2, Bloomville, Ohio 44818
Farmer

- MARQUART, RICHARD, MRS., RR #2, Bloomville, Ohio 44818
Housewife
- MARQUART, RICHARD, RR #2, Bloomville, Ohio
Farmer
- MARRONE, ANTHONY J., Rd. #2, Plymouth, Ohio
Sohiqro Service Co. Lead Operator
- MARGHAL, BURNS WILLIAM, Box 137, New Haven, Ohio 44850
Electrical Maint. Pioneer Rubber Co.
- LEWIS, MARY, 229 Lelan Street, Tiffin, Ohio
Housewife
- MAXWELL, DOYLE, RR #2, Bloomville, Ohio
Farmer & Teacher
- MAXWELL, ELSA, RR #2, Bloomville, Ohio
Housewife & Farmer
- NAUS, GLEN L., Retired
- MERRILEES, JOHN J., Rd. #1, Ne Fairfield, Ohio
Farmer
- MESER, BETTY O., Rt. #2, Attica, Ohio
Clerk
- MILES, W. A., 18 Maple Street, Tiffin, Ohio
Reporter/Advertiser - Tribune
- MOORE, DANNY, RR #2, Attica, Ohio
- NIEDERMIER, GAIL, Rt. #1, Tiro, Ohio
Farmer
- NEDERMIER, PHILIP, Farmer
- NIELSEN, B. H., 792 Andover Road, Mansfield, Ohio
Retail Sales Mgr., Standard Oil Co.
- NIELSEN, DONALD, MRS., RR #1, No. Fairfield, Ohio
- NIELSEN, DONALD E., Rd. #1, North Fairfield, Ohio

- 1 NEDOLAST, JOHN, RR #1, New Washington, Ohio
2 Farmer
- 3 NELSON, STEVE, 702 Manchester, Bucyrus, Ohio
4 News Director, WBCO Radio
- 5 OTT, CARL, Rd. #3, Norwalk, Ohio
6 Farmer
- 7 PARKINSON, ROBERT, 506-1/2 W. Warren Street
Soil Scientist/Soil Conservation Service
- 8 PAYLOR, MAE, RR #1, Box 90, New Washington, Ohio 44854
9 Farmer
- 10 PHENICIE, DON, RR #1, New Washington, Ohio
Farmer & Mail Carrier
- 11 PIFHER, R. C., 325 Jump St., Bucyrus, Ohio
Director of Utilities, Bucyrus
- 12 PIFHER, CHARLES B., RR #1, Tiro, Ohio
Truck driver
- 13 PIFHER, CARL, RR #1, Tiro, Ohio
14 Farmer
- 15 PIFHER, FREDERICK F., RR #1, New Washington, Ohio
Farmer
- 16 PIFHER, GROVER, RR #1, Tiro, Ohio 44887
17 Farmer
- 18 PIFHER, STEVE, RR #1, Tiro, Ohio
- 19 POLLOCK, JOHN E., Box 340, Tiffin, Ohio
Const. Engr.
- 20 PRY, CAROL J., RR #1, Box 240
21 Homemaker
- 22 PRY, ELDON, Rt. #1, Crestline, Ohio
Farmer
- 23 REDPATH, W. B., 508 Myrtle, Willard, Ohio
24 Manager, Quality Control, R. R. Donnelley & Sons Co.

- REICHERT, WILLIAM F., Rt. #1, Attica, Ohio
Farmer
- REICHERT, WILLIAM, MRS., RR #1, Attica, Ohio
Housewife & PA 1 Tiffin State Hospital
- RICTSCHLIN, EUGENE, RR #1, Crestline, Ohio
Farmer
- RICHEY, GLADYS M., RR #2, Ashland, Ohio
Farmer
- RICHEY, RAYMON, Ashland, Ohio
Farmer
- RIEMAN, ALBERT, Crestline, Ohio
Farmer & Trustee
- RIEMAN, RICHARD & LINDA, RR #1, Tiro, Ohio
Farmer
- ROBERTSON, DONALD, 87 Old State Road, Norwalk, Ohio
Huron County Commissioner
- ROEDER, CHARLES B., Rt. #1, Monroeville, Ohio
Township Trustee
- ROHR, LESLIE, 47 Clay Street, Tiffin, Ohio 44883
Student
- ROSCOE, C.B., 101 Fairway Circle, Norwalk, Ohio
Office Director
- ROSS, MARVIN, Box 14, Chatfield, Ohio
Mechanic
- RUEHLE, BETTY J., 22 W. New Haven Street, Bloomville, Ohio
Trucking & Farm Owner
- SABO, M. D., RR #2, Monroeville, Ohio
Farmer
- SAGE, CHARLES, D., 111 Park Street, Willard, Ohio 44890
Farmer & Railroader
- SCHAAF, ROBERT, RR #2, Attica, Ohio 44807
Farmer

- 1 SCHANZENBACH, MARIA, R #1, New Washington, Ohio 44854
2 Farmer
- 3 SCHEKELHOFF, ED W., 42 Grand Avenue, Tiffin, Ohio 44883
4
- 5 SCHMIDT, WALTER, 170 E. Oak Drive
6
- 7 SCHNEIDER, ROBERT M., Attica, Ohio
8 Student
- 9 SCHNELL, LEONARD, RR #2, Apple Creek, Ohio
10 Farmer
- 11 SCHWADERER, ROBERT, RR #1, New Washington, Ohio 44854
12 Farmer
- 13 SCHWADERER, CLINTON, New Washington, Ohio
14 Farmer
- 15 SCHWAB, G. O., 2073 Neil Avenue
16 Professor
- 17 SCHUELER, Farmer
- 18 SEELER, UWE K., G5 S. Front Street., Room 808
19 Chemist, Dept of Nat. Res.
- 20 SETCHEL, HARLAN, Rd. #1, Bellevue, Ohio
21 Farmer
- 22 SHEIBLEY, ROBERT D., RR #1, New Washington, Ohio
23 Prod. Mgr., Herald Print.
- 24 SHEIBLEY, L. PAUL, RR #1, New Washington, Ohio
25 Farmer
- 26 SHELL, JOHN F., RR #1, New Washington, Ohio
27 Farmer
- 28 SHELL, DAWN, RR #1, Box 108, New Washington, Ohio
- 29 SHELL, ROBERT, MRS., RR #1, Box 108, New Washington, Ohio
30 Farmer
- 31 SHELL, MICHAEL, RR #1, New Washington, Ohio
32 Farmer

- 2 SHELL, JOSEPH M., Rd. #1, New Washington, Ohio
Farmer
- 3 SHELL, MELVIN J., RR #1, New Washington, Ohio
Gardener & Orchardist
- 5 SHOOK, ARTHUR, MRS., Rt. #1, Bloomville, Ohio 44818
- 6 SHOCK, ROBERT E., RR #2, Bloomville, Ohio
Farmer
- 7 SHOCK, V. F., Attica, Ohio
Farmer
- 9 SHRADER, DONALD C., 610 Clark Street, Willard, Ohio
Paper Engineer
- 10 SIEFERT, ARNOLD, New Washington, Ohio
- 11 SIEFERT, DONALD, 772 W. Washington, Ohio
Farmer
- 13 SIMON, RON, Mansfield, Ohio
Reporter - News Journal Mansfield-
- 15 SAWYER, DWIGHT, Rd #1, Tiro, Ohio
Farmer
- 17 SLAGH, GENE, Galion, Ohio
State Senator
- 18 STACY, DALE, RR #1, Green Springs, Ohio
Senece Co. Commissioner & Farmer
- 19 SLESSMAN, CLOYCE, Rd. #1, Plymouth, Ohio
Farmer
- 20 SMITH, NORMAN H., RR #2, Box 182
Farmer
- 21 SMITH, FRANK V., Rd. #1, Box 183D, Willard, Ohio
Farmer
- 22 SMITH, ROBERT W., RR #1, Sandra Drive, Bucyrus, Ohio 44820
Soil Conservationist

- 1
2 SMITH, BILL, Republic, Ohio RR #2
Executive Secretary
3
4 SMITH, MAURICE B., 103 First Street
County Commissioner
5
6 SOURS, EDWARD J., County Commissioner, Sandusky County
7
8 SPEECE, MELVIN & JUNE, Rt. #1, Attica, Ohio
Teacher & Landmark, Inc.
9
10 SPRINGER, JIM., Box 184, New Washington, Ohio
Farmer
11
12 SPRINGER, DALE, JR., Box 184, New Washington, Ohio
Farmer
13
14 SPYKER, BERNARD, Box 282, Attica, Ohio
Village of Attica Asst. Supt., Water & Sewers
15
16 STARK, JOHN A., 349 Hopley Avenue, Bucyrus, Ohio
Newspaper Reporter, Bucyrus Telegraph-Forum
17
18 STACKLIN, JAMES, MRS., RR #1, New Washington, Ohio
Farmer
19
20 STAIGER, GERALD, RR #4, Box 4314, Bucyrus, Ohio
Technical Director of Utilities, City of Bucyrus
21
22 STEIGER, JOSEPH R., 519 S. Poplar Street, Bucyrus, Ohio
Soil Scientist
23
24 STEIN, JOSEPH C., Mohawk Road, Tiffin, Ohio
Seneca County Commissioner
25
26 STERLING, J. W., 245 N. High St., Columbus, Ohio 43216
Ohio Farm Bureau Director, Press Relations
27
28 STEWART, HAWK, 93 E. Main Street, Shelby, Ohio
Expediter, Emp. Detroit Steel
29
30 STOCKMASTER, JAMES, Construction
31
32 STOCKMASTER, S.C., New Washington, Ohio
33 STROHMEIER, JOHN, New Washington, Ohio
Farmer

- 1
2 STUDER, DOLORES, MRS., Rd. #1, Tiro, Ohio
3 Housewife
4
5 STUDER, CLARENCE, RR #1, Tiro, Ohio, 44887
6 Farmer
7
8 STUDER, JOSEPH, Rt. #1, Tiro, Ohio 44887
9 Farmer
10
11 SUVER, PAUL W., 500 Tiffin, New Washington, Ohio
12 Mechanic
13
14 TAYLOR, VENITA S., 621 Maplewood Avenue, Willard, Ohio
15 Homemaker
16
17 TAYLOR, WILCOX E., 621 Maplewood Avenue, Willard, Ohio
18 Manager Purchasing, R. R. Donnelley & Sons Co.
19
20 THATCHER, T. W., Box 36, Sulphur Springs, Ohio
21 School Administrator
22
23 THOMPSON, J. W., New Washington, Ohio
24 Manager New Washington Equity
25
26 THORNTON, KENNETH, Box 207, Willard, Ohio
27 Attorney
28
29 UTZ, GEORGE F., MRS., Rt. #2, Box 102, Attica, Ohio 44807
30 Housewife-Farm Owner
31
32 UTZ, LESTER J., Rt. #1, New Washington, Ohio 44854
33 Farmer
34
35 UTZ, LESTER J., MRS., Rt. #1, New Washington, Ohio 44854
36 Housewife
37
38 UTZ, MARGUERITE, Rt. #2, Box 102, Attica, Ohio 44807
39 Bookkeeper
40
41 UTZ, ROBERT, Rd. #1, Box 337
42 Farmer
43
44 VERBA, BETTY, 8800 Banner Lane, Parma, Ohio
45 Trustee

- 1
2 VERBURG, HOWARD F., RR #1, Greenwich, Ohio
3 Wastewater Treatment Operator, City of Willard
4
5 WALTZ, EMMA, New Washington, Ohio
6 Farm Owner
7
8 WALCHER, RALPH, Farmer
9
10 WEAVER, ELDON, Farmer, Businessman
11
12 WILLIAMS, ARLYN C., RR #1, Attica, Ohio
13 Mechanic, Farm Owner
14
15 WILLIAMS, DONALD D., RR #1, Attica, Ohio 44807
16
17 WILLIAMS, LAURA R., RR #1, Attica, Ohio
18
19 WILSON, JOHN T., 111 Woodbine, Willard, Ohio
20 Retired
21
22 WOLDORF, ART, Columbus, Ohio
23
24 WRESCHE, HILLARY, 104-1/2 Madison, Tiffin, Ohio 44883
Student
25
26 WURM, FRANCIS, MR. & MRS., RR #1, New Washington, Ohio
27 Farmer
28
29 WURM, HAROLD, 39 Hillcrest
30 Printing
31
32 YOUNG, BERNARD J., Rd. #2
33 Farmer
34
35 YOUNG, LLOYD K., RR #2, Norwalk, Ohio 44857
36 Soil Conservationist
37
38 YOUNG, MARY, RR #2, Shelby, Ohio
39 Housewife
40
41 YOUNG, NORBERT, Rd. #1, Tiro, Ohio
42 Farmer
43
44 ZITZKE, LARRY, 3378 Anita Street, Columbus, Ohio
45 Civil Engineer, OEPA

- 1
2 ZUCKER, RICHARD , RR #1, New Washington, Ohio
3 Farmer & Trustee
4
5 ZUTAVERN, DOROTHY, RR #1, Bloomville, Ohio
6 Farmer
7
8 ZUTAVERN, HAROLD, MRS., RR #2
9 Farmer
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11 WEBB, JACK L., Box 504, Norwalk, Ohio 44857
12 CED ASCS USDA
13
14 WELLS, JOHN, 180 Milan Avenue, Norwalk, Ohio
15 Co. Ext. Agent
16
17 WELTER, HAROLD W., RR #1, Bloomville, Ohio
18 Farmer
19
20 WERTZ, C. LeVERNE, RR #5, Tiffin, Ohio
21 County Commissioner, Seneca County
22
23 WHITE, RICHARD K., 2073 Neil Avenue, Columbus, Ohio
24 OSU
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26 WIEBE, PETER A., 509 Park Street
27 Retired Teacher
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INDEX OF SPEAKERS

	<u>NAME</u>	<u>ORGANIZATION</u>
1	Colonel Robert E. Moore	Corps of Engineers
2	Mr. Larry Zitzke	Civil Engineer OEPA
3	Mr. Gene Slagh	State Senator
4	Mr. Gene Damischroder	State Representative
5	Mr. Richard Kreenin	Mechanic
6	Mr. Charles Roeder	Township Trustee
7	Mr. Albert Rieman	Farmer Trustee
8	Mr. Duane Dick	Farmer
9	Mr. Herbert Harrer	Farmer
10	Mr. Leonard Schnell	Farmer
11	Mr. Robert T. Jones	Farmer
12	Mr. Jack Webb	Private Individualist
13	Mr. B.H. Nielson	Mansfield Chamber of Commerce
14	Mr. Joseph Steiger	USDA Soil Conservation Service
15	Mr. Norman H. Smith	Farm Bureau of Public Affairs
16	Mrs. Betty Verba	Holiday Lakes Property Owners Association
17	Mr. William Bauer	Township Trustee of Clerks
18	Mr. Ralph Helmstetter	MGr Farm Chemical Service
19	Mr. Frank Smith	Farmer
20	Mr. Eldon Weaver	Farm Chemical Center
21	Mr. Harold Beat	Farmer
22	Mr. Lester Utz	Farmer

INDEX OF SPEAKERS (CONT.)

2	Mr. Melvin Shell	Gardner and Orchardist
3	Mr. John Pollack	Conservation Engineer
4	Mr. Luther Gibbs	Farmer
5	Mr. J.W. Thompson	New Washington Equity, Manager
6	Mr. Garry Cole	Engineer-Floyd G. Browne & Associates
8	Mr. Russell Colter	Private Individualist
9	Mr. Edward J. Karl	Farmer
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PROCEEDINGS

3 COLONEL MOORE:

4 Ladies and gentlemen, there were quite a few people
5 outside signing their names to the little cards which is
6 one of those administrative chores we are required to do
7 in these public meetings. I am sorry for that inconvenience.
8 but we're required to do that.

9 There are several reasons, one of which is to dictate
10 for posterity in the records how many people were at these
11 public meetings, and obviously the number of people at a
12 public meeting in an area where one of the plans affects
13 you and you are opposed to it. That headcount becomes
14 critical to your opposition, and I wanted to specify that.
15 That's why we registered. I have a formal statement to
16 make tonight. I'm guided by regulations as most everybody
17 is, in or out of the federal service. I will follow a
18 general procedure, and I will describe it to you if I may.
19 I have sort of a formal statement to make in reference to
20 the Corps plan thus far and to our conclusions to date,
21 and as I told you in previous public meetings, the planning
22 effort that I do is not mine to execute or implement.
23 Therefore, any recommendations to be made on this effort
24 will be made by the State of Ohio. In that regard the

1
2 State of Ohio is represented in co-chairing the meeting with
3 me tonight. And the State of Ohio does have a position
4 paper to read tonight. Dr. Ira Whitman made that statement
5 at the final public hearing last night, and it will be made
6 by his representative, Mr. Larry Zitzke, who sits at the
7 table at the far right and is from Ohio EPA. Accompanying
8 him representing the State is Mr. Art Woldorf, who as I
9 mentioned in previous public meetings, has been with us and
10 has done a yeoman's job in cooperating in the study effort.
11 with us and he is on my immediate right. And he is from the
12 Department of Natural Resources, the State of Ohio.

13 I don't know and have not found out to date at this
14 time whether or not the Federal EPA is represented here
15 tonight or not. Are they? The U.S. EPA? The U.S. EPA
16 was represented last night at the public meeting, and they
17 did sit at the head table. I wanted to invite them to sit
18 up here tonight.

19 I did want to depart from my normal with you and follow
20 a written script. It gets a little formalized, but I won't
21 cover all the points if I don't. I think it's important
22 that we cover all the points. I do want to thank the State
23 of Ohio for their cooperative effort with me since I have
24 been personally on this study, and that's been since June

of last year. The study is older than I am as District Engineer of Buffalo.

I also want to thank you, the public, because without your influence and after all the impact of these projects are on you, and you have to live with them and we don't. Therefore, if one of the plans is unacceptable, and this is a final public meeting, you should certainly make that statement. If you have made it before, reconfirm that position. That's what this meeting is all about.

(READS PREPARED SPEECH)

(INSERT BETWEEN SLIDES 6 & 7): I might as well ad lib at this point in time and say to you that one of the features of this study that was never achieved because it wasn't funded -- a shortage of fund, time, etc., -- was a look at the Three Rivers themselves that are involved in the Basin to discern what the quality of the water is today.

And as you go down the Pike to the improvement of water, what is the differential in the quality of the stream that you obtain as you march down that Pike. Once you arrive at Level I, do you have to stop there or march on to Level II? Because the cost to you, the public, is horrendous between the two levels as you will see. I'm not so sure that we were not funded to do that as long as we understand it was

a necessity to do that in order to see what kind of level of effluent treatment we must obtain and pay for as citizens of this country. This would be in order to achieve the level of water quality in the streams. We may well overtreat the effluent and never achieve the water quality in the stream. Or we may achieve the water quality in the stream with some less treatment than what we paid for it.

I think that you as the public deserve to know that. You are paying for it. I just pass those things onto you, because they come out in the study of all the alternatives that we look at.

If the Lake Erie Study goes, and we get it in the Buffalo District, I can assure you we're going to look at just that backing off from Lake Erie what quality is required in the stream in order to achieve that quality in Lake Erie. That kind of went astray, but really is a piece of part and parcel of the product that we're talking about. How much water quality in our effluent of wastewater do we need?

Another vital important step is that if you don't treat the Level II, you don't go to land.

(READS PREPARED SPEECH)

(INSERT BETWEEN SLIDES 7 & 8): Now we were asked by Congress to look at all technologies and if you read

Public Law 92-500, the Clean Water Act Amendment of 1972, it also requires states to look at all technologies in the development of regional planning. So, we have done this for the State. That is not to say that they have to be used; they just have to be looked at, and we have looked at them.

Whether they are used or not in my view is up to you. You are going to use them, and you are going to pay for them. They are going to affect your life. I know that I have said that before and it wasn't believed, but I really mean that. You will see as we proceed along the way.

(READS PREPARED SPEECH)

(INSERT BETWEEN SLIDES 12 & 13): I might say here this is another reason why I must have a reconfirmation of whatever your decision as the public is. I need it, you know, by the timeframe that I will discuss with you as I get on down the Pike.

(CONTINUES TO READ PREPARED SPEECH)

(INSERT BETWEEN SLIDES 14 & 15): I would like to ad lib here one minute and say to you that the Level I standards used in my study, because they were developed some time ago, are not the same State of Ohio criteria published today. This was the Mahoning River Study and at that time was the only specification of level of standards that the State had.

2 It has not been updated to reflect anew.

3 (CONTINUES TO READ PREPARED SPEECH)

4 (INSERT DURING SLIDE 16): You have these. I am not
5 going to take time to discuss them. You may discuss them,
6 or you may look at them. If you want to ask questions about
7 them later, they are damn difficult to read, I might add,
8 but look over them, discuss them, and if you have questions
9 on them later or after I leave, write me those questions and
10 I'll attempt to answer them. I may answer most of them
11 tonight. I'll try. There is not much information available
12 however.

13 I would like to discuss the costs of the alternative
14 plans, public acceptance to date and conclusions.

15 The conclusions only effect you, since you have them listed
16 before you.

17 (CONTINUES TO READ PREPARED SPEECH)

18 (INSERT BETWEEN SLIDES 17 & 18): You can get that by
19 looking at the end result of Plan A I and A II. and you can
20 see ... it costs the public to go from Level I criteria to
21 Level II criteria just on conventional waste treatment process
22 alone. That big difference in cost is what makes plant
23 treatment look good, because plant treatment can be achieved
24 at a lesser cost. There is a big question as to whether you

need to go to Level II or not.

(CONTINUES TO READ FROM PREPARED SPEECH)

(INSERT DURING SLIDE 19): I might also add in any kind of configuration implemented by any level of government, local or otherwise, certainly some very basic regulations and control criteria, regardless of the kind of technology achieved or the level achieved, are going to have to be prepared. If you are going to put systems in being with this expense on them to create this level of treatment, there are going to be major cost factors if they are not properly operated and maintained. The biggest costs are in the operation and maintenance, except for land treatment. That biggest cost is in the building.

(CONTINUES TO READ FROM PREPARED SPEECH)

(INSERT DURING SLIDE 22): The reason we say that in the upper basin it appears that land technology may in fact, even for Level I, could be the cheapest alternative, because the land is very close to the sites.

(CONTINUES TO READ FROM PREPARED SPEECH FOR SLIDE 22)

(INSERT AFTER SLIDE 23): I am not going to go through all the conclusions; I'm just going to respond to the ones I think effect you most.

(CONTINUES TO READ STARTING WITH CONCLUSION 6)

(INSERT DURING SLIDE 24): Again, I would like a reconfirmation of whatever your position is or a restatement of whatever your position is for the record if I may have it. I think it's important to you and I certainly think that it is important to me.

I would like to go on now and talk about what I determined to be the ten most critical concerns of the public and North Central Ohio.

If I missed one, I apologize. If I put one in that you don't think is a concern, I apologize for that too. Maybe it is my concern. I have ten of them. I want to give you what we can do and cannot do about those ten concerns. You'll have a little more information, not much more, to base your evaluation and decision on. It is your decision. These are the concerns. I'll go through them individually.

(CONTINUES READING STARTING ON SLIDE 26)

(INSERT BETWEEN SLIDES 27 & 28): This would add costs. How much cost would have to be determined in the design analysis, since we would take a hydrologic study of all the river basins to include the tributary basins. We certainly have not had the funds nor the time to perform that kind of design analysis, and that is a design analysis and not a planning analysis.

I just wanted to indicate to you that we have documented that into the study, and I will document it here and forever as a concern. It is a valid concern. There are engineering solutions with added costs.

(CONTINUES TO READ PREPARED SPEECH IN SLIDE 27)

(INSERT DURING SLIDE 28, PARAGRAPHS 3 & 4): The reason I don't know the cost of that, and I could figure it out, I don't know what the application rate acceptable is. There's no reason to worry about this concern until we settle the concern of application rate. Otherwise, I could compute it for you. I don't want to stand up here and tell you it's not capable of being computed. I am just telling you that it is not with the time. That's if we can't settle the application rate problem.

(CONTINUES TO READ PREPARED SPEECH OF SLIDE 28)

(INSERT BETWEEN SLIDES 28 & 29): Why am I going through all of these? Whether you accept or reject Plan C, if you are ever going to consider land treatment for your own concern, you ought to be aware of these concerns and the answers that are able to be provided and the ones that are not able to be provided.

(CONTINUES TO READ PREPARED SPEECH)

(INSERT DURING SLIDE 30, PARAGRAPHS 4 & 5): By industrial

options, we have excluded heavy metal content in the sludge process from industry. There is heavy metal content in the municipal system alone, particularly in the storm water runoff.

(CONTINUES TO READ PREPARED SPEECH OF SLIDE 30)

(INSERT BETWEEN SLIDES 30 & 31): What I am trying to tell you is that to engineer out the application rate problem requires more land, but not a heck of a lot more money, even if you buy the land, compared to the total cost of the system. Now, it does tie up more land. About 1.6 times more land.

(CONTINUES TO READ PREPARED SPEECH OF SLIDE 31)

COLONEL MOORE:

I would like to invite your comments, written or formal, tonight on our final effort.

Ladies and gentlemen, that finishes my formal statement, and I believe Mr. Larry Zitzke has a statement to read that was presented last night by Dr. Ira Whitman personally.

Larry?

MR. LARRY ZITZKE:

I appreciate the opportunity to comment on the Wastewater Management Study as it may effect the future of the resources and environmental quality of the State of Ohio.

The Ohio Department of Natural Resources and the Ohio Environmental Protection Agency have cooperatively evaluated concepts proposed in this important report, and my statement is intended to represent the joint conclusions of both Departments.

In viewing the Wastewater Study in its entirety, we feel it is an unusually useful and well-prepared report. We will make immediate use of the information and conclusions presented during the perpetual updating and improvement of required basin and metropolitan water quality plans and in the formulation of sorely needed strip mine reclamation plans. Let me assure both the Corps and the Congress that this study will not be placed on the shelf and forgotten. The relevance and usefulness of the report was greatly enhanced by the truly outstanding efforts of Colonel Moore and his staff to work in a close and sincere partnership with counterpart planners in state government. We thank Colonel Moore for this dynamic relationship and urge that other Corps Districts and federal agencies emulate his example.

Despite my enthusiasm, however, it should not be assumed that we feel that all the relevant water quality questions have been answered or that the Wastewater Management Plan can, in itself, be certified as a basin quality plan. This

1
2 was beyond the intent of the funding capability of the Corps
3 and we fully understand that fact.

4 In reviewing any Wastewater Management Plan, and especially
5 one of this magnitude and importance, the Ohio EPA must be
6 constantly aware of the plan's relationship to Public Law 92-500
7 passed October 1972, and to our national problems of energy
8 resources. This plan considers both of these factors in
9 making its final recommendations.

10 The policy of the State of Ohio is to pursue the goal
11 of Public Law 92-500, that is the elimination of the discharge
12 of pollutants to the navigable waters by 1985, by making
13 optimum use of all the resources available to us and minimiz-
14 ing waste.

15 The plan proposes four alternative strategies for waste-
16 water management and requests that the State make the final
17 plan recommendations. This is consistent with water quality
18 planning requirements of the Federal EPA, and with the desires
19 of the State.

20 The State of Ohio will consider alternatives A I, A II,
21 and B for recommendations after receiving comments from the
22 public and consultations with the U.S. Environmental Protec-
23 tion Agency. At this time the State of Ohio will not consider
24 alternative C, that of the transport of wastewater for land

treatment in North Central Ohio, as one of the viable alternatives, unless the public in the Three Rivers Watershed area and the North Central area requests the State to consider it among the alternatives.

We are all aware that the most widely discussed aspects of the Wastewater Management Study are its proposals for land disposal of treated sewage. There is nothing new, of course, in this concept. Spray disposal or broad irrigation of various industrial wastes have been practiced for many years in Ohio with reasonable success. After reviewing the Corps study, I believe I would have little hesitation in reviewing proposals for land disposal of adequately treated wastes from communities of less than 100,000 population in the same way I would review any other waste treatment plan design.

(Our community of 100,000 would require less than 400 acres for land disposal of wastes.)

Every plant design must pass rigi. examination by Ohio EPA for effectiveness, cost, safety, and operability. It is true, however, that there is a significant difference between land disposal of the industrial wastes on small fields owned by the industry and land disposal of sanitary wastes on larger land areas. We would be interested in seeing this concept utilized by one or more communities of less than 100,000

1 population both in the Sandusky Watershed and the Three Rivers
2 Watershed. We would be particularly interested in innovative
3 attempts to make positive economic utilization of the liquids
4 being disposed of for improved agricultural returns. Special
5 and detailed quality monitoring of the runoff, the soil and
6 the crop produced would be required. We are concerned about
7 land disposal over large areas, where institutional and
8 political problems would outweigh technical considerations.

9 And transfers of water from basin to basin need to be
10 subjected to particularly harsh scrutiny -- for hydrologic
11 and social reasons alike.

12 Depositing sludge on land areas as a means of disposal
13 is a generally worthwhile concept, and this may be especially
14 true for strip-mined areas in Ohio where sludge may also aid
15 in their restoration.

16 The State of Ohio wishes to give support to proposals
17 utilizing sludges for strip-mined land reclamation and
18 proposes that a first year trial of sludge disposal in
19 Harrison County be pursued, based upon local acceptance.

20 The Ohio EPA in consultation with interested parties
21 will designate a committee including OEPA, DNR, City of
22 Cleveland, Harrison County, Coshocton County, OSU and Case
23 Western Reserve to study the transfer of Cleveland sludge to

strip-mined areas and submit these recommendations to the State within 60-90 days.

I will ask the committee to study the proposal to transfer Cleveland's sludge by truck for one year to strip-mined areas. OEPA will request U. S. EPA to prepare environmental assessments for this project.

As we view water quality and resource planning needs in Northern Ohio, I feel that a vital area has thus far been omitted: That is, the potential impact on Lake Erie of these and other water management alternatives.

There is an urgent need for a comprehensive Lake Erie water quality management plan. Lake Erie is the recipient of the runoff and the wastes and the sediments from one of the most complex urban, industrial and agricultural areas in the World, yet we possess only a very limited knowledge of the dynamics of the vast body of water.

To meet this need, we urge that Section 108 of PL 92-500 be immediately funded in the full amount authorized and that the study be conducted by the U. S. Army Corps of Engineers in a realistic partnership with Canada and the States of Ohio, Michigan, Pennsylvania and New York. Ohio stands ready and eager to participate in this study.

In conclusion, I again wish to thank the Corps for this

useful report. I would also urge members of the public and their governmental agencies at all level to communicate with us regarding the foregoing concepts. If we are to meet the high environmental goals set by the public, we must work together to utilize every available scientific technique. We look forward to a long and continued working relationship between the people of Ohio and the outstanding staff of the Buffalo District Office of the Corps of Engineers.

Thank you.

COLONEL MOORE:

Thank you, Larry. I think if nobody minds, you might want to get comfortable. We're going to have another long night. These are the cards for the people who would like to speak tonight, and I think we ought to have them speak.

I first have two that I must speak to. We normally take, at a public hearing, in the order of U. S. Congressional Senatorial Staffs, State and Local officials, and then the public at large. The cards are arranged in that order.

I might say that I have been in Ohio since Tuesday morning, so I have been hard to reach by the Congressional staff, but they did get me before I got to this meeting tonight.

Congressman Latta was to be here tonight, but he could

1
2 not make it. He wanted to very much and could not make it.
3
4 He asked me to state at this public meeting that he,
5 Congressman Latta, as well as Congressman Guyer and Ashbrook
6 are opposed to any plan that would transport Cleveland
7 effluent to the North Central Ohio area. Is that understood?

8 I also have a statement that was handed to me tonight.

9 (APPLAUSE)

10 That will be entered in the final report, by the way.

11 I also have a statement that was handed to me tonight
12 by the Crawford County Commissioners, and it is addressed to
13 me. It says, "Dear Sir: We the elected Board of County
14 Commissioners of Crawford County, Ohio, hereby wish to
15 express our objection to the plan for the distribution of
16 wastewater and sewage to be deposited in Crawford County,
17 Ohio, from the Cleveland-Akron metropolitan and Three Rivers
18 Watershed area. We object by being impractical, illogical
19 and a detriment to the community. Respectfully," and it is
signed by the Board of County Commissioners.

20 (APPLAUSE)

21 I would like to now call on those people who have
22 indicated a desire to speak.

23 The first man I have is Mr. Gene Slagh, State Senator,
24 Galion, Ohio.

2 MR. GENE SLAGH:

3 Thank you, Mr. Moore.

4 I want to make a brief statement here. I anticipated
5 saying a few words, but I didn't think I would have the
6 opportunity to speak so early.

7 I, too, would like to join the Congressmen and the
8 Commissioners in my personal opposition to this plan.

9 Now, the thing is that I would like to go a little bit further
10 to show the complexity and some of the problems that we haven't
11 really discussed.

12 As Secretary of Agriculture, Environmental and Conserva-
13 tion Committee of the Ohio Senate, I have had an opportunity
14 to hear much of the testimony on the Clean Water Bill and
15 the Environmental Protection Agency and all of their activi-
16 ties.

17 I think the thing that we don't quite realize when the
18 Congressmen say that we're opposed to the plan, I think it
19 should be made perfectly clear they are the ones that passed
20 the things originally.

21 Now, today we met on Senate Bill 80. Tomorrow we will
22 probably vote it out of committee. I will have to vote for
23 that bill for one reason. If we do not establish plans in
24 the State of Ohio by the State Government, then the Federal

1
2 Government shall establish the program. And I don't think
3 any of us want to see that.

4 So, you see, this program has been started on a federal
5 level, and even those monies that have not been appropriated
6 to do it, we're trying to move entirely too fast in an area
7 of environment that we're not in the position to cope with.
8 That is one of the basic problems.

9 In other words, the requirements on the federal legisla-
10 tion is so stringent that we have a most difficult problem in
11 trying to meet those requirements, and that's really the
12 problem that we have on a state level. I just want to ask one
13 other question.

14 Are there any other legislators here from Columbus?

15 MR. GENE DAMSCHRODER:

16 Yes, sir.

17 MR. GENE SLAGH:

18 Gene is here. Where are you, Gene? Hurray! I couldn't
19 find you.

20 Well, I know we had to cancel some things in COLUMBUS
21 in order to be here, but this is a very serious problem and
22 I do want to say this:

23 It is also a very serious problem to try to find a way
24 to take care of the waste of all the metropolitan areas and

even those that are desirous that try to work out a plan of
their own waste appreciate that too.

So, you see, it is not an easy one, and I don't want to

be critical of the Army Corps of Engineers, because, after
all, they only did the thing that the Federal Government
requested them to do. And I appreciate the fairness of it.

I appreciate the stand that the State has taken that they
would not force this plan upon us without the willingness
of this group to support it.

Now, I think before the evening is over, Colonel Moore,
I want to be sure there is a vote taken that I can incorporate
in my records too. How many is for it and how many are against
it. I think I know pretty well, but I just want to have a
count for the record. I think it is only fair that you have
an opportunity to hear all the statements before you vote.
So I think that's the fair thing about it. But that is my
position, folks.

I am only happy to work with you and have tried to
cooperate, but I just can't support this plan.

Thank you very much.

COLONEL MOORE:

Mr. Gene Damschroder? State Representative of
District 85.

1
2 MR. GENE DAMSCHRODER:

3 I want to thank you, Colonel Moore, and the other
4 gentleman. I didn't get his name.

5 COLONEL MOORE:

6 It is Mr. Zitzke.

7 MR. GENE DAMSCHRODER:

8 And we have another fellow here I want to thank for
9 getting some information from him. Mr. Woldorf?

10 Today, this morning, at 10:29, I talked long distance by
11 telephone to Washington, D.C., to Mr. Latta, and he was eating
12 lunch with Guyer and Mr. Ashbrook. What time did you get that
13 notice that they told you?

14 COLONEL MOORE:

15 My people got it immediately at 4:00 o'clock.

16 MR. GENE DAMSCHRODER:

17 I spent about an hour talking to Latta this morning,
18 and I told him that I didn't believe we were too happy with
19 what he wanted to do to you. So, apparently it got through
20 already.

21 Latta has got Seneca County. Ashbrook has got Huron
22 County and Guyer has Crawford County. Am I right on that?

23 I think I am.

24 Incidentally, my mail has been heavy against this whole

1
2 project, and I'm still waiting for your letters that are for
3 it. How come I don't get mail?

4 Gene mentioned something about taking a vote. You have
5 had plenty of time to think it over. Why don't we just get
6 the vote out of the way? Everybody that is against this
7 project just hold your hand up. I don't believe you're
8 going to change your mind. You had it made up before you
9 got here tonight. If you have your hand in your pocket,
10 take it out. Nobody's going to steal your billfold.

11 All right, anybody in the other direction? I think this
12 might be a good proposition to try. Business don't look so
13 good.

14 Is your arm broke, or is that the way it came? I don't
15 know if I would hold my hand up in this crowd.

16 I found out that London, England, has tried a project
17 like this, and they are making \$4 million a year. You know,
18 this wouldn't be too bad if we could cut your taxes \$4
19 million a year off this project just in case Cleveland doesn't
20 want it. We could always take the money in. We don't want
21 to be the guinea pigs to see if it is going to work here.

22 I think Plan A and Plan B would be worth a try, because that
23 happens to be right there. A? Do you remember what A was?

24 It was that little pipeline they already got to run it down

2 to Cadiz, Ohio. And you are going to have a meeting there.

3 Isn't that right?

4 We could try that without any effort at all just to get

5 that thing going. It wouldn't cost any more taxes. Now,

6 Plan B, they will have it right at home. It is where the

7 problems starts. Now, I think that would be a good one.

8 As I said before, Plan C in a year like you farmers have just

9 went through, I saw a fellow the other day -- it was one of

10 those days where it was dry for five minutes. He had his

11 combine out combining corn. I guess I used to husk it by

12 hand and now you combine it.

13 Anyway, he had a big field ahead of him, and I saw
14 another one right next to him in case it got done too quick.

15 And it didn't get done. So, you are not going to sell that

16 fellow too quick on extra water right now. He is using a

17 bathing suit right now.

18 Now, in Milwaukee, I found out today, Milwaukee

19 markets the merchandise they make.

20 If you remember when I was here about a month or two
21 months ago, I said we should make some big concrete vats.

22 I don't know. Ten for 100 acres square or whatever it takes
23 to get the job done. We have got plenty of engineers to
24 help us figure that out.

1
2 Now, we make two of them vats. While one is filling,
3 the other is drying. We bag it up and sell it after it is
4 dry. And there is going to be a good market. Now, they do
5 that at Milwaukee already, and it is not nothing new. They
6 did it for -- we're not quite sure how many years. I haven't
7 got that far into it. If you need any, it is called Mil-
8 organites. It is a fertilizer, and it is sold dry and it
9 is in 50-pound bags.

10 So, we have a good thing going here, and we might get our
11 taxes cut yet when we get to selling this. Everybody, don't
12 give me your orders tonight.

13 Now, these people in this area, we have just went
14 through one of the worst tornadoes that America has seen in
15 this area. There is one thing that anybody that would like
16 to start this Plan C project in there, it's going to make
17 that tornado look like a Sunday school picnic if they start
18 this Plan C project the way I understand it. And I thank you.

19 COLONEL MOORE:

20 Mr. Howard Verberg. You are on County Regional Planning?

21 MR. HOWARD VERBERG:

22 I have only one thing I would like to say and that is
23 this:

24 According to the booklet which was sent out here or the

2 draft, one of the objectives of the Northeast Ohio Water
3 Development Plan as defined by the Ohio Water Commission was
4 and this is a quotation, "To provide the most cost effective
5 abatement strategy considering social and environmental
6 factors for protecting existing and projected water uses and
7 to prevent degradation of the existing high quality waters."

8 Now, my question is, and this is strictly a question,
9 how are we going to accomplish this objective if Plan C is
10 implemented? Thank you.

1 COLONEL MOORE:

2 I am going to pronounce this wrong. Is it Richard
3 Kreenin? He is from New Washington, Ohio, a mechanic.
4 He is representing the Cranberry Township.

5 Is that correct?

6 MR. KREENIN:

7 Yes.

8 COLONEL MOORE:

9 Do you want to come to the microphone?

10 MR. KREENIN:

11 I don't feel that that plan is of any use to us. You
12 can't farm in four-and-a-half inches of water.

13 COLONEL MOORE:

14 Would you like to come to the microphone, sir, and give

1
2 us that?

3 MR. KREENIN:

4 This project is no good for this part of the country,
5 because you can't put four-and-a-half inches of water on
6 good land a week and expect to farm. You might as well turn
7 it back to the way it was before it was discovered.

8 COLONEL MOORE:

9 Mr. Charles Roeder, Township Trustee, Richfield Township.

10 MR. ROEDER:

11 Yes. I am from the Richfield Township, and I am speaking
12 for the Huron County's Trustees and Clerks' Association.
13 They are very much opposed to this in every way. Thank you.

14 COLONEL MOORE:

15 One thing for certain. We're going to get a concensus
16 tonight.

17 Albert Rieman, Farmer and Trustee?

18 MR. RIEMAN:

19 I am a Trustee of Vernon Township.

20 COLONEL MOORE:

21 Would you like to speak up here?

22 MR. RIEMAN:

23 No. I am 100 percent against the thing. I don't think
24 it will work, and let Cleveland have it. We have plenty of our

own problems right here at home.

COLONEL MOORE:

Mr. Duane Dick, a farmer representing himself.

I have taken the liberty of intermingling associations and people. If that's wrong, chastise me later, but everybody ought to get a chance to speak before we finish.

MR. DUANE DICK:

(READS EXHIBIT 2)

(INSERT BETWEEN PARAGRAPHS 3 & 4):

I have a chart on the back of my speech which I will submit here, and it shows the comparison between Colorado, Australia and Ohio. It gives the average annual rainfall and their land uses and population of the areas. They are in no way similar to what Ohio is.

(CONTINUES TO READ EXHIBIT 2)

(INSERT BETWEEN PARAGRAPHS 5 & 6):

I will add to what I have prepared here. I mentioned that there was only six irrigation areas that they had a problem with. They were fixed up by putting tile in. Well, we have already got tile, and we are still having problems. So I don't know how putting more tile in is going to help.

(CONTINUES TO READ EXHIBIT 2)

COLONEL MOORE:

2 Herbert Harrer, a New Washington, Ohio, farmer,
3 representing Crawford County Farm.

4 MR. HARRER:

5 Thank you for the opportunity to make a few remarks about
6 the way the Crawford County Farm Bureau feels about this thing.

7 We have been studying it, and we have come to some
8 conclusions of our feeling about it.

9 (READS EXHIBIT 3)

10 COLONEL MOORE:

11 I did not touch on the energy requirements, and I should
12 have. I am sorry. Plan C calls for about twice the consump-
13 tion or even mainly more than that of the electrical consump-
14 tion of the other two plants. That's a major impact on the
15 area, since you import electricity now. This is in the
16 documentation. I told you I would be fair in my appraisal
17 of the plans, and I think I have at least served you that.

18 I might add, however, that Plans A and B require about
19 three times the chemical consumption of Plan C, and that's a
20 major concern for the future also. No matter how we march,
21 if we have to achieve Level II, and that's a questionmark,
22 we're going to face an energy crisis, either in the chemical
23 arena or in what you consider energy power, gasoline and that
24 kind of energy.

These are really grave concerns of the future. Believe me. So, either way there we have got problems, and they aren't the only ones. That's just talking about wastewater.

Frank Fenner, farmer, Richland County Bureau.

I might also add that the original intent of my contract in looking at the farm aspects and the use of Reed Canary Grass is, No. 1, it would withstand more moisture. But more importantly to him, it would eat up more nitrogen in the soil. Therefore, you could apply more effluent, and, therefore, more nitrogen on that soil. That was the primary reason. I didn't say it was the thing to do; I just said that was the primary reason.

MR. FRANK FENNER:

(READS EXHIBIT 4)

COLONEL MOORE:

Mr. Leonard Schnell, President of the Ohio Farm Bureau.

It's good to see you here again tonight, sir.

MR. LEONARD SCHNELL:

As you know, I did make a statement last evening for the privilege for which we appreciate it. I only impose upon your time, because the nature of this hearing is a little different than that one.

I would like to state the position of the Ohio Farm Bureau.

1
2 After the vote that was called for by the legislature, it
3 hardly seems necessary to say much of anything. Besides,
4 many of the statements which have already been made have
5 covered in part the statement we made last night.

6 We are, of course, I think everyone is appreciate of the
7 tremendous problem all metropolitan areas have, and I
8 think we sympathize with this problem.

9 We also commend the way in which the study was made in
10 that it provided several alternatives, and we appreciate that
11 because there are those alternatives, to which we can turn.

12 A part of our concern, which has not been touched on
13 too deeply, are questions of agronomy problems.

14 Many of you people have referred to water which will
15 be applied to this area or would be. I would like to remind
16 you that it isn't only water. There are included in this
17 effluent material not only plant nutrients, but minerals,
18 metals and salts and compounds made from them.

19 We met with representatives with the Army Corps of
20 Engineers a year ago, and we expressed some of our concerns
21 in question form and asked that these questions be answered
22 by research before we could possibly go along with a plan
23 like Plan C. The Chairman has already recognized the fact
24 that this research can hardly be completed by 1975 or even

1980 of this kind of research. Our experience with the Environmental Protection Agency is tha. they tend to overrate the nutrients, which are allegedly found in the water outlets from our tiles and our waterways. But if we see these kinds of nutrients in this kind of water, then we're concerned about the amount that they will allege in an application of fertilizer of something like three to four times the rates that you are now applying. If there are to be future charges for this kind of pollution, we wonder whose responsibility it is to pay. We are concerned about the metals and compounds and the effect they will have on the capacity for the soil to produce, because we know that certain salts and other compounds will, in high concentration, render soil incapable of production.

Even before that time, if you will study the list of metals in the study, these are found in the crops which are produced or in the animals that eat them, will these products be removed from the market as they have been in so many other cases.

We have a concern, I think, and this has been touched upon that the tunnel could possibly, without further research, hydrological research, could possibly receive either some of the underground water systems, which some of the residents of

2 the area depend upon for their water supply. We would ask
3 that this be properly researched.

4 As we stated last year and again in a news release
5 earlier this year, our position must remain that until
6 satisfactory answers, these and other questions that have
7 been raised this evening are answered to our satisfaction,
8 the Ohio Farm Bureau must continue to be opposed to Plan C.

9 Thank you.

10 COLONEL MOORE:

11 Thank you, sir. One reason we asked Ohio State University
12 to look at the agricultural aspects of this study was not so
13 much the quantity of water, because we can design that out
14 very readily, and I explained that to you. It is the same
15 kinds of concerns that have been expressed by the Farm
16 Bureau by Mr. Snell and others. That is the proper design of
17 the crop with a nutrient content of the effluent and the
18 concern of the farmers and of the farm management techniques
19 and can they be worked together? Those are major concerns.
20 The social upheaval is the other concern. We think we could
21 design around a social upheaval. We don't know. Certainly,
22 we don't want to try it on a grand scale until we know.

23 Robert T. Jones, Jr., Seneca County Farm Bureau.

24 MR. ROBERT T. JONES, JR.:

I have a short statement here I will inject in your records. I might add that when I wrote this, I was assuming that over the long term that agriculture would not be a primary interest and a viable industry in this proposed area.

(READS EXHIBIT 5)

COLONEL MOORE:

Mr. and Mrs. Jack Webb, Farm Organization.

MR. JACK WEBB:

Colonel Moore and ladies and gentlemen. On behalf of the Huron County ASCS Office and the County Committee of Huron County, I would like to thank the attendance of the farmers in a rural community and the metropolitan area of all these counties represented here tonight for coming out and having such an interest and having such an impact in this community. Thank you very much.

COLONEL MOORE:

Mr. Nielson, Mansfield area Chamber of Commerce.

MR. NIELSON:

I want to preface my comments by thanking the Corps of Engineers for their cooperation for the beginning of this study and their bringing this study to this area.

We were involved with your study in the one that involved the Ashland-Loudenville, South area of Mansfield and now

1
2 involves the North area of Mansfield, and we're also very
3 interested.

4 The Chamber of Commerce Wastewater Land Treatment Task
5 Force, which I am the Chairman of, has made recommendations
6 to the Chamber of the Board of Directors, which has been
7 approved and communicated to the Corps of Engineers in
8 writing.

9 Tonight I am here to repeat our previous position in
10 which we are fully committed and have taken a firm position
11 against the treatment of wastewater transported from the
12 Cleveland-Akron area to the North Central Ohio area.

13 We feel that after studying your feasibility summary and your
14 draft summary report of May, 1973, Plan C is not in the best
15 interests of this area, and these are some of the basic
16 reasons.

17 We feel it will restrict the economic development of
18 the entire area; that it will materially detract from the
19 quality of life with the potential for odors and the effect
20 on the recreational activities in the area.

21 We feel that based on earlier comments it might present
22 possible health hazards to the area, and it would have the
23 potential of significantly reducing the tax base of the area.

We're not certain of the possible effects of nuclear power

1 a
2 plants, which could use the wastewater for cooling purposes
3 but feel this should be studied carefully. We, however,
4 are not against specifically the use of the land treatment
5 method for our own local sewage treatment practices.

6 We feel that the Muskegon County - Michigan project, which is
7 now underway but has not yet been implemented, we feel that
8 this should be studied closely to determine the equitable
9 effects of land treatment, because as we understand it, this
10 is the first full-scale plan of its kind in the country.

11 I had an opportunity just to inspect that two weeks ago,
12 and even a projection for just a single county, just the size
13 of Richland County, is immense.

14 To imagine a dike area larger than ten cliff work
15 reservoirs as a lagoon is just staggering. This is the
16 thing we're against, the huge scope of this project. We
17 feel that it should be handled within the Three Rivers
18 Watershed area but that possibly on a smaller scale this
19 particular technique might have some application, if it
20 is safe and warranted in this area. That's the only comment
21 after a very thorough study of all the pros and cons.

22 We favor in effect local solution of local sewage problems
23 in the local area.

24 COLONEL MOORE:

I think one of the most unfortunate things in the plans that we had to develop was the fact that we had to develop a plan for land use, and we had to develop the least cost option, which forced the single site, which in my view would never be designed or implemented in that fashion.

The second unfortunate thing is the load coming to the town, but that again was on cost-effective basis. I hope that even if you do not retain Plan C, and you seem not to want that, that's stated a little bit mild, but I hope that you would not discard this possibility of technology for your own use. It is a viable technology. Don't let me lead you down the path that it is not. It is a way to recycle nutrients provided that the design of the system is closely associated with the fond desires. In other words, mutual compatibility in a design of that system against the desires of the farm community.

So, I just leave that thought. Nor is it possible to design a system to bring the Cleveland effluent and design it properly against those desires, and that's what I was trying to stress when I talked about the ten concerns, and I leave you with the thought that some of them have not been answered, and that's what I am fearful of.

Joseph R. Steiger, USDA Soil Conservation Service.

MR. JOSEPH R. STEIGER:

My name is Joe Steiger, and I am in charge of the Crawford County Soil Survey. My intent in speaking tonight is not to take a stand either for or against any of the plans which were proposed by the Corps of Engineers.

The main reason for being up here is to clarify some of the misconceptions as to the role of soil surveys and these kinds of proposals. I would like to begin by pointing out that most of my comments will be in relation to the last three points, which Colonel Moore mentioned dealing with application rates, farm management, economic aspects and heavy metals.

On all of these questions, as Colonel Moore mentioned, there are not sufficient facts to really judge how well or how poorly any kind of system is going to operate. Our survey in Crawford County was initiated in 1969 before anyone heard anything about a wastewater system such as this.

Since I have begun the survey in the Crawford County, we have begun to get research papers from various locations such as Pennsylvania, Illinois and other places discussing the soil as a filter media.

And to just summarize a lot of this information, this

1 soil is one of the best filtration media that we have.
2 It is a living system, and I think we discount its potential.
3 The problems that all of you and I recognize, as having in
4 this area, is the fact that our soils have a high water
5 table, exceptionally high this year. This is why the tile
6 drainage is so important in this County and the soil
7 conservation districts have been very active in promoting
8 drainage, this drainage and all the other things that are
9 essential for good farming.

10 The point I want to make is that our survey is in no
11 way directly linked to the plan, which the Corps of Engineers
12 has developed. We have provided some information to them,
13 because they are as welcome to this information as any other
14 person, the public or a private individual.

15 I think the kind of information you are developing is
16 some of the most vital information, if we are going to go
17 with local systems to treat our own wastewater. It is the
18 kind of design data that is not available on a wide scale at
19 this time.

20 These kinds of surveys are being done throughout the
21 State, and we hope to have the entire Statesurveyed in about
22 25 years. I think the information that we're developing is
23 the best on the spot for about what kind of soil is in any
24 .

2 particular field and how that soil will perform under any
3 given kind of circumstance or land use.

4 We are basically in the business of collecting data.

5 We're not in the business of making land use decisions.

6 That's the business of landowners, planning commissions and
7 local government.

8 The role of the Soil Conservation Service is, in my
9 capacity at least, to collect factual scientific accurate
10 information. I am in a sense appealing to you to not get
11 confused with the whole question of how your land is going
12 to be used with assembling factual information about that land.
13 I thank you very much.

14 COLONEL MOORE:

15 That sounded like an apology for having done some work
16 that contributed to the study. I might add that I for one
17 don't need to apologize for anything that's in that brochure.
18 I was asked to look at technical feasible alternatives to
19 wastewater treatment. I have done that. I was asked to
20 assist those on the bases of political impact, social upheaval,
21 etc. I have done that. I was asked to make a conclusion
22 relative to those findings. I am doing that. And I don't
23 apologize to any of you. On the contrary, I am happy that
24 we offered all the possibilities and have forwarded all the

1 comments. I am happy that you contributed to those.
2

3 Mr. Donald A. Bradrick.

4 MR. BRADRICK:

5 I'll pass. Everything has been said that I was going
6 to say.

7 COLONEL MOORE:

8 Thank you.

9 Norman H. Smith.

10 MR. NORMAN H. SMITH:

11 First of all, I am Public Affairs Chairman for Huron
12 County Farm Bureau, and we have taken a vote with our Trustees,
13 which is unanimously against this land treatment proposal
14 as such.

15 We have approximately 830 members in Huron County.

16 Our President, Frank Smith, is here. He may have more to say.

17 Personally, I think we're here for one reason. Cleveland
18 has got something that they don't want. And I don't think we
19 want it. And I am not against land treatment as a method,
20 but I believe it would be better if it was treated closer to
21 its point of origin. I thank you.

22 COLONEL MOORE:

23 Thank you, Mr. Smith.

24 I have a statement by the Crawford Regional Planning

2 Commission that was handed to me. I was not asked to read it.
3 If you want it read totally, I shall, but I would like to
4 comment on it if I may.

5 It is to inform me that the Regional Planning Commission
6 is on record in opposition to the Corps proposal of Plan C.
7 It was recorded previously and told to me previously, and
8 this is a reconfirmation of that opposition. I think that's
9 in essence what it is. If I am wrong, I will stand corrected.
10 It is in opposition whether it has been previously stated or
11 otherwise.

12 Mrs. Betty Verba, Holiday Lakes Property Owners Associa-
13 tion.

14 MRS. BETTY VERBA:

15 I am Betty Verba, Trustee for the Holiday Lakes Property
16 Owners Association.

17 We own three lakes of 220 acres, nine acres and a one
18 acre pond north of Willard. We have 1260 lots with over
19 150 homes now built.

20 Our Holiday Lake Watershed covers 14 square miles within
21 the proposed land treatment area.

22 Our lake is already eutrophic, and we are fighting to
23 save it. Our property owners are concerned about Plan C.

24 What guarantee would we have that the Three Rivers

1
2 effluent could be kept from our watershed, so that it would
3 not affect our lakes? Thank you.

4 COLONEL MOORE:

5 Mr. Bill Bauer, Self-Grange, Township Trustees and Clerks.

6 MR. WILLIAM BAUER:

7 I represent the Crawford County Granger Legislative
8 Chairman and also the Granger Township Trustees and Clerks
9 Association.

10 Both these groups unanimously adopt the resolutions
11 opposing bringing Cleveland sewage to Crawford County or
12 this area. As I understand Colonel Moore, you said in
13 Akron, they had a complete treatment. Is that right?

14 COLONEL MOORE:

15 Yes.

16 MR. WILLIAM BAUER:

17 Why can't you have more treatments up there and do it
18 up there? We don't want it. Up until the last year or two
19 farmers were considered second-class citizens. There were
20 huge classes of food, and the farmer was sort of looked down
21 upon. But in the last year or two, due to several things
22 such as floods, the food has dwindled. Right now, I think
23 the farmers are the most essential people in this country.

24 To take this land out that you propose here would take very

1
2 fertile land out of production. Along with Leonard Snell,
3 I was a member of the Environmental Protection group, which
4 helped set up some of these rules and regulations. We were
5 in a minority. I think there was 40 some on the committee.
6 About six or seven of us tried to use common sense, but we
7 were overruled by environmental groups such as the Sierra
8 Club, the Audubon Society and so forth.

9 All of the things that came out of there weren't neces-
10 sarily what I think in the best interests of the people.

11 The only thing or the thing that bothers me more than anything
12 else tonight, if we can believe our legislators who are here,
13 this thing has stopped for the present, but are we going to
14 have to keep on year after year fighting this?

15 COLONEL MOORE:

16 I think that last remark deserves somewhat of an answer.
17 I think I told you at previous public meetings that because
18 your area is large in agricultural land, the study of the
19 Cleveland Three Rivers Watershed may not be the only one
20 that looks in this direction. Whether any others do or not,
21 I couldn't assure you and I don't think any of the legislators
22 sitting here could assure you. I would only suggest that
23 if this one is vetoed as it seems to be by popular opinion,
24 whoever starts the next one ought to be led to this one as a

base case to start with. That's the only thing I could say.

I would also add that you probably are going to face one other aspect of an environmental study, and it has to do with rural wastewater management, which has to do more with the storm water aspect than the wastewater aspect, because you get the sediment flow which may well have an impact upon Lake Erie.

In that regard, I may be back to see you again in the future. I don't come back again in the future in that study as an enemy. I just come back to say I have been given the task to do and a problem to look at, and I hope collectively we can find a proper solution.

That's what we're attempting to do tonight. I didn't just offer Plan C. That's why I don't think I need to apologize. There are plans that would, in fact, keep it in the basin.

Ralph Helmstetter.

MR. RALPH HELMSTETTER:

I pass.

COLONEL MOORE:

Thank you.

Frank V. SMith.

I did want to caution you about the Lake Erie Study,

because it will be in your back yard. That is a problem in
Lake Erie, sediment flow.

MR. FRANK V. SMITH:

I am President of the Huron County Farm Bureau, and as
Norman stated, the Board unanimously voted that they are
against this Plan C of sending this wastewater into this
area.

(READS EXHIBIT 7)

COLONEL MOORE:

Eldon Weaver.

I think the answer to your question is yes, if it is
publicly acceptable and cost effective.

MR. ELDON WEAVER:

Eldon Weaver, Farm Chemical Center, Attica, Ohio,
farmer, home owner with 400 acres.

At this time I wish to present this copy to you for my
record and pass to the many more that want to get on this
evening.

COLONEL MOORE:

Thank you, sir. I appreciate it.

(APPLAUSE)

COLONEL MOORE:

They are clapping for two reasons. They know what it

1
2 says, and they are glad you didn't read it.

3 Harold Beat, farmer.

4 MR. HAROLD BEAT:

5 My name is Harold Beat. I am a dairy farmer living near
6 Attica.

7 At this time I would like to take the opportunity to
8 thank the Corps of Engineers to speak my piece.

9 (READS EXHIBIT 9)

10 COLONEL MOORE:

11 Mr. Sabo?

12 MR. SABO:

13 I pass. Everything I wanted to say has already been said.

14 COLONEL MOORE:

15 Thank you, Mr. Sabo.

16 Mr. Lester Utz, farmer.

17 MR. LESTER UTZ:

18 I see by your map that my farm apparently lies in what
19 would be the big vault. I want to express my appreciation
20 to the Ohio Committee and add to the Congressmen who have
21 more or less reassured me that it will not be used for a
22 disposal area for Cleveland's waste. Thank you.

23 COLONEL MOORE:

24 Mr. Melvin Shell?

1 2 MR. MELVIN SHELL:

2 3 All I wanted to add is what Mr. Damschroder said about
3 4 the plant in Milwaukee that has been in operation for 34
4 5 years. I would say that that is long enough to prove that
5 6 it works. They spray this water. I think it is for five
6 7 or seven acres on sludge limestone. I think it is 20-foot
7 8 deep. Why can't they do that in Cleveland?

8 9 COLONEL MOORE:

10 10 Mr. Pollock, John Pollock.

11 11 MR. JOHN POLLOCK:

12 12 I am not a farmer. I will simply say that I am, indeed,
13 13 apprehensive over Plan C. I have reasons, which you have all
14 14 mentioned.

15 15 Dr. Whitman, is it, has addressed a communication to
16 16 Colonel Moore, which I think is ample reassurance that the
17 17 proposal will be properly evaluated here.

18 18 There are some omissions in the presentation which I
19 19 would like to comment on.

20 20 In this report, the financial aspect, there is an amount
21 21 of land to be taken quite logically. There immediately went
22 22 up a big howl. Now, the reason I am mentioning this, is
23 23 because this method works. Let's say I endorsed this
24 24 situation, but I want to caution you against crossing it off

1
2 in other applications and other situations. The reason I
3 bring this to your attention that the omission in the report
4 was that Ohio has several legislative alternatives to protect
5 the taxpayer where land must be taken by use for others.

6 They are, specifically, the Conservancy Act, the Water
7 District Act and the Sanitary District Act. In each of these
8 instances, where these enactments were employed, the benefits
9 are charged back or costed back to the people who make use
10 of the facility, so that the taxpayers aren't out anything.

11 Going ahead into another area with respect to computation
12 of the report, it is appreciated that the commission which you
13 have been given is wastewater treatment, or disposal. Now,

14 I am deeply concerned that we, today, are prone to settle on
15 only one aspect of a problem. We are talking about wastewater,
16 but let us consider, for instance, the enormous amount of
17 solid waste that issues from these metropolitan areas.

18 You and I as taxpayers ultimately will have to pay one way or
19 another for the concept or means of disposing of those wastes.

20 Now, we have at hand within these proposals, in this
21 report, an alternative that may well be considered, and it
22 is my suggestion, now, that this be incorporated and further
23 consideration be given by the Corps and at the State level.

24 Specifically, I see no reason why at this juncture the solid

1
2 waste computation and exclusion into a slurry for dressing
3 the wasted soils in the mining area is not to be considered
4 practical. If that isn't the sentence, I'm sorry.

5 Now, this may sound a little farfetched at this juncture
6 and at this location, but we're talking about the evaluation
7 of a general plan. You farmers are very much concerned about
8 your farm, and I am too, but I am also concerned in another
9 aspect of this thing. We're spending an awful lot of dough
10 for this, and I think we better turn up some long-range
11 results, and of these long-range results, I foresee that in
12 five or ten years how in heaven's name are we going to get
13 rid of all that garbage. Thank you.

14 COLONEL MOORE:

15 Thank you, sir. That's a very valid point.

16 I might add that although our funds did not cover the look
17 at that aspect of the problem, we have, in fact, with the
18 State looked at it, and it does, in fact, look like a fairly
19 good proposal, since the strip-mine areas have fairly deep
20 gorges in them now. They have to be filled. That possibility
21 of the combination of a solid waste fill project along with
22 land restoration in that area seems very profitable, not
23 only in the long term but I might add in the very short term.
24 We have talked to the State about that, and we are proceeding

1
2 to look at it. They are. We aren't.

3 I walk off with this study when I turn the final report
4 in unless I am asked to come back as I told you before.

5 But we're looking at that, and it will be a savings to the
6 taxpayer if it will work. We can only treat 2000 acres of
7 that land at a time in a year, even with all the sludge
8 that's developed in Cleveland. We can only treat 2000 acres
9 a year. Maybe not even that much. There are 210,000 acres
10 out there to treat.

11 So, there is a lot of time to develop the program of
12 solid waste along with that sludge program, I can assure you.
13 That's about 100 years of treatment at 2000 acres a year.

14 Mr. -- I'm sorry. If I were French, I would say Ecole
15 which means school, and I know that's not right. It's
16 Route 2, Willard. Retired implement dealer. He's going to
17 speak for himself. It's W. W. and it looks like Cole.

18 An unidentified man:

19 It's Eidle.

20 COLONEL MOORE:

21 I'm sorry. I couldn't read it. I apologize.

22 Is he here? I guess he had to leave.

23 Mr. Luther Gibbs.

24 MR. LUTHER GIBBS:

2 My name is Luther Gibbs, 2912 CR 265, Fremont, Ohio.

3 (READS EXHIBIT 10)

4 COLONEL MOORE:

5 I think that one deserves an answer, and I gave a partial
6 answer to it during the briefing.

7 The answer to your question is yes, it would have an
8 impact. I don't believe it would have an appreciable impact
9 as far down as Fremont.

10 However, that would have to be looked at very closely.
11 It would have an impact in the tributaries in the area that
12 contributes to the stream that flows through Fremont.

13 My district designed and constructed that Fremont project,
14 so we're as concerned as you are about that.

15 It would take a decided amount of design data to give
16 you a definite answer to your question, but there is no question
17 in our mind that the possibility exists for flooding in the
18 headquarters and in the smaller tributaries of the streams
19 that flow into the rivers.

20 The answer to your question as to whether the liability
21 would rest with Cleveland, the answer is probably no.

22 It should never occur. If it is to occur, it should be
23 designed out before the project ever grows, and that would
24 add money to the cost of the project. Is that fair enough?

1
2 Mr. Thompson?

3 I think that's a fair answer. That too depends on the
4 application rate, and I can't give you a cost factor.

5 MR. J. W. THOMPSON:

6 Colonel Moore and ladies and gentlemen. I represent
7 New Washington Equity Company, New Washington, Ohio, as
8 Manager. And this is a copy of the letter that we sent to
9 Colonel Moore and also to several of the State Senators
10 and State Representatives. I shall read this to you.

11 (READS EXHIBIT 11)

12 COLONEL MOORE:

13 Mr. Garry Cole.

14 MR. GARRY COLE:

15 Thank you, Colonel Moore. If the people will excuse me,
16 I am going to address my comments to the representatives of
17 the CEPA and our legislative members of Ohio, because I think
18 that this is really where the decision will lie in the long
19 run.

20 We have heard many comments here tonight, and we
21 could beat a horse to death. I would like to say that on
22 behalf of Colonel Moore, no one has had a chance to scan some
23 of our appendices of the report in the various libraries
24 throughout the communities.

Let me take this opportunity to suggest to you that you do. There is very, very much information contained therein. I think at the last meeting that I personally attended in New Washington, Ohio, there were many questions that were unanswered.

I think that now many of these questions have been answered and it is quite well documented in the various appendices in those various libraries. If you do have a chance, I would recommend that you do scan this at your own convenience.

I would like to make a note that in one of the appendices, Appendix 6, I believe, called the evaluation, there is a very good evaluation of the conclave concept; that of bringing the entire effluent discharge down to this community. The discussions, and I was going to give it to you, but I don't want to belabor the point, it does discuss the problems. It does point out to the OEPA that the problems do exist, and it suggests that the OEPA and legislators do take this into consideration. Again, I think perhaps this will tell our people here that the ideas that we present to the Corps and that we present to the OEPA and the legislators have not been glossed over, but they have been written into an appendix that the OEPA will and should and I hope analyze in

making their decision.

Some of the other items I would like to just touch upon here, one, that I don't believe this has been given enough emphasis here, but we talked about the development in green belt areas. If we have an aerated lagoon in this area with 114 or up to 177,000 acres of irrigated land, we would develop with our own communities a green belt area. That is really desirable from a study point of view. I really believe, and I direct this especially to the members of the OEPA, that who needs the green belt areas more than the urban areas.

I sincerely believe that Plan B is probably one of the most acceptable to the people here and probably one of the better plans of the four proposed plans.

Let us get the green belt areas in the areas where we need them. We have green belt areas here. We have production and economy, but the people that need the green belt areas and the recreational areas, lets do it there.

One of the other difficulties that I do see, and that is that neither anyone in the OEPA staff or the Corps of Engineers or the legislators or you or I -- when there is a power plant down on the Ohio River producing little black smoke, if that smoke is being produced in our backyards, then we're concerned with it. I am not saying that to the

1
2 effect that we don't want Cleveland effluent. I am saying
3 this to the effect that there is really better control at
4 the local level. Not that we don't want it, just for
5 per se reason that we don't want it, but because the control
6 is better handled at the local level.

7 I would like to just point out that Colonel Moore touched
8 upon power concept. I think if I may, I think it is something
9 like 6500 megawatt hours of power consumption required for
10 Plan C, which is double some of the other plans. This amounts
11 to a cent and a half a kilowatt hour, which is probably
12 high, but it amounts to something like a \$100,000 a day power
13 cost.

14 In my eyes, we may have a lagoon area down here that
15 will contain some cooling water acceptable to a power plant
16 operation, and, granted, that power production will be in
17 excess of what would be consumed with Plan C, but I still
18 look upon it in some light of robbing Peter to pay Paul.

19 As I said before, I am here speaking here for myself.
20 The firm I do work for, we are currently working in Bucyrus,
21 Ohio, on a land concept. I thoroughly endorse a land treat-
22 ment proposal based on a small community such as the size of
Bucyrus.

23 Doc Whitman said that even less than 100,000 would even

1
2 be considered. There is no better assimilator of nutrients
3 than the soil, and Joe Steiger, who talked to you about it
4 for 15 minutes the other day, backed this up tonight when
5 he also reinforced the idea.

6 So let us not give up on the land treatment opportunities
7 that we do have available for various villages and cities
8 throughout our community if we want to actually approach the
9 problem correctly.

10 I might also say, I hope you will forgive me for looking
11 at some of my notes, but there was another subject that wasn't
12 touched upon. I heard some comments at the last meeting, and
13 that was that someone said, "You know, they are really setting
14 us up, because when Cleveland gets their pipeline in, what's
15 going to happen? Is Toledo going to come up and is Columbus
16 going to come up?" However, if you look in one of the
17 appendix, and I can't reference to it right now, but one of
18 the appendices does tabulate the wastewater effluent flows
19 for Findlay, Tiffin, Bucyrus and some of the other surrounding
20 cities. It indicates that the pipeline would be at such a
21 depth or at least at such a location to be pumped over to
22 handle this additional effluent. It is not recommended;
23 I am just saying it was discussed. Land area, I believe, would
24 require approximately 42,000 additional areas of irrigation,

1
2 so, this is a potential further development of the plan,
3 should it ever be incorporated. This would represent, I
4 believe, about 25 to 40 percent additional cost.

5 So, one other point I want to touch upon, and forgive me
6 for jumping around, but there is an out-of-basin concept that
7 is an alternative that we have really totally divorced, because
8 an old 1909 law indicated that we cannot take the water out
9 of the Cleveland Watershed areas, and this concept is taking
10 it back to the counties of Stark, Columbiana, Carroll, Holmes,
11 Harrison, Tuscarawas, and Wayne County, which was somewhat
12 originally proposed that that be eliminated, because of
13 state-levied watersheds. This would require perhaps additional
14 monies, but it is a feasibility, because the Cuyahoga River
15 has a lower elevation, and, consequently, the effluent could
16 be returned to the Cleveland Watershed.

17 I didn't point this out. The comparison that was
18 completed in one of the appendices indicated that the soils
19 in this county, and I would have to rely upon soil signs
20 like Joe Steiger did here, they indicated the soils in these
21 counties were perhaps even a little bit better than the soils
22 in our own area. I don't say this facetiously or anything.
23 But this was presented. What I am saying is that the
24 appendices give a much more thorough examination than we can

1
2 ever hope to give here.

3 In detail, just let me say that the members of the
4 ODEPA and the Ohio bodies, although we may have a technical
5 feasible plan, I do not really believe it is a complete plan
6 without some kind of a social adjustment in social considera-
7 tion. Thank you.

8 COLONEL MOORE:

9 Thank you, Garry. We did take the liberty of looking at
10 the Toledo requirements and the possibility of Toledo coming
11 here as well, only to set that stage for you, because we
12 felt that you ought to have that in the study of the documen-
13 tation. We did also look at carrying it across Harrison
14 County, where we proposed to take the sludge application to
15 the strip-mine areas, and it is a feasible alternative,
16 although it is blocked and stymied by the U. S. and Canadian
17 agreement not to take water out of Lake Erie Watersheds and
18 put it in some other watersheds. It would also meet with
19 some other difficulty, because again, you would be storing
20 nutrients until such time you could apply growth to that area.

21 Mr. Wurn, farmer and group leader in Mansfield.

22 MR. WURN:

23 I have nothing to say. Anything I would say has already
24 been said.

1
2 COLONEL MOORE:

3 Thank you. Mr. Heydinger, farmer. Is he still here?

4 (No response.)

5 COLONEL MOORE:

6 Mr. Walcher?

7 UNIDENTIFIED MAN #1:

Went home.

8 COLONEL MOORE:

9 Mr. Coulter?

10 MR. RUSSEL COULTER:

11 I was born and raised in the Cuyahoga River Valley,
12 and my folks still own land in the Cuyahoga River Valley.
13

14 My brother works down there. When I was a boy, I swam and
15 fished in the Cuyahoga River. I swam without my mother's
16 permission, I can assure you of that.

17 Now, at the present time you hear a lot of TV commercials
18 about the open sewers, but I would say if you go down to my
19 dad's farm, and we farmed quite a bit of land, up the River
20 Valley, beyond Brecksville from Route 17 south, if you would
21 go up the River Valley and stop at all the creeks where the
22 creeks empty into the Cuyahoga River and all of this is coming
from the Akron area, we ain't talking about Cleveland, these
creeks in August, when the creeks are low, will look like any

1
2 sewer around here. I don't know where you can get blacker
3 or dirtier water. If you put your arm in that river today
4 abcut the Cleveland sewage plant, you can break out in a rash.
5 But I would say there is quite a bit of land between the
6 river and the canal and the canal valley that was farmed.
7 I know we did 20 or 30 acres that could take care of the
8 primary and at least give it a treatment.

9 The water that's now coming in is not even primary
10 treated in my estimation.

11 In the early 30's, the men had to get out of the dairy
12 business on the creeks that ran through a farm for the simple
13 reason they built an allotment in the water canal so black
14 that they couldn't keep the cows. But I think there is
15 plenty of land in all the watershed districts in Cleveland
16 and Akron that is nowhere near homes that they could treat
17 this sewage in fairly good shape.

18 Now, I will say this. I farm up here. Maybe Dave don't
19 know it, but the chemical companies know I am a vegetable
20 grower and fruit grower. The chemical companies that sold
21 me the chemicals have killed all the earthworms on my land
22 practically. And they have plugged up my tiles.

23 Now, if we go by Plan C, two years ago I got tile that
24 I used to raise potatoes, and I have to have a well-drained

1
2 soil. There was water in Southeast Ohio. It is getting
3 worse since angleworms have been killed. The only way I
4 found the tile, there was a crabhole, but if you work Plan C
5 and if they don't kill the earthworms or the crabs, this
6 water will get right back into the tile what they are draining
7 without it even being treated, and it will run right back into
8 the streams again. I don't think that would be treating it.

9 Here is something I would like to ask. If you will
10 study the history of the World, in the late 1700's, London
11 had a problem there with their open sewers, and they built
12 bridges over their creeks and found it didn't work. What I
13 am trying to say is that big government refused to recognize
14 their problems in the Cuyahoga County in the 30's, 40's, and
15 50's. They had the history of the World before them. But
16 you can't build cities and dump sewage, and our government
17 leaders did the very thing that destroyed other civilization.
18 The history of the World shows that.

19 I would like to ask how the Cleveland area watershed
20 area government, what laws there is in the State of Ohio and
21 the national government, where the Cleveland area watershed
22 area government can supercede the governments, the local
23 governments, like Seneca, Crawford and Harrison County,
against their objections.

I am afraid of big government. Every civilization had
big government, and it fell. I would like to know how --
you see, this is eminent domain. I will say this. In the
early 30's, we used sludge from the Cleveland Disposal Plant,
which is what they are talking about sending out to the
coalminers. Now, we raised celery and endive from that stuff
in those days. It was fertile. You could take clay ground
and throw six-inches of that on there and raise anything.
But the leaders of America, they fired all those men that
were thinking of that in the 30's. They got a new school in.
They dump it down the river and into Lake Erie. Now, the
same guys want to take over again.

COLONEL MOORE:

I think the State comments in their announcement
which say to you that they don't believe that the community
of Cleveland could force their sewage over here without some
pretty hefty support from the local community, and I think
that's what they are trying to tell you. I think that's
speaking for the State, but I think that's about correct.
They got a legislature in that State, and I think it has
got to go through them.

Does the State want to speak to that?

MR. ZITZKE:

1
2 You said it fine.

3 COLONEL MOORE:

4 Mr. Edward J. Karl.

5 MR. EDWARD J. KARL:

6 To make it short, why aren't letters of opposition
7 recognized at the higher levels? Now, this young chap at
8 the table for OEPA he said the State is going to do this
9 and the State is going to do that. Don't they know we're
10 opposed to this hanky-panky?

11 What's the matter with the people down there? We wrote
12 to Ashbrook; we wrote to Taft; and we wrote to Saxby. Now,
13 what are they doing, passing the buck or do they just take
14 it up lightly or put it down as eminent domain?

15 COLONEL MOORE:

16 I think it's a good question.

17 MR. KARL:

18 Answer it in full, will you, please?

19 COLONEL MOORE:

20 I will attempt to. Most planning efforts are done by
21 the Corps of Engineers before they are executed, and, again,
as I explained to you before in the previous public hearings,
the Corps would not execute this plan. It did it as a planning
process and would turn it over to the State. But it still

1
2 goes for federal review and for a comment. If funded or if
3 authorized, it would have to go before Congress. Now, at that
4 point, Congressmen Saxby, Ashbrook, Latus, etc., you can bet
5 your bippy would speak up. Until such time, their voices
6 remain constantly in opposition to this Plan C, and I don't
7 think you will see the change. I don't expect to.

8 The same with the State legislators. Their voice goes
9 in this area. I think it remains in constant opposition to
10 this plan and will remain in constant opposition to this plan.
11 I think any action the State might want to take on this plan
12 would have to be in direct opposition to their opposition,
13 and I don't think that would be too easy to come by.

14 What I am trying to tell you is we were asked to do a
15 planning exercise which did include, in fact, a look at the
16 total land technology. I did tell you in the review of the
17 12 alternatives that it was not feasible in this area, only
18 an almost land technology was. We looked at it. It was
19 publicly unacceptable. It will go down in our record as
20 publicly unacceptable.

21 I think I have said that tonight without the final
22 public review. It was indicated to me very harshly at the
23 New Washington meeting and again at all the other meetings,
24 and I think I have recorded that for posterity.

I think you will find any written documentation that was provided to me by any citizen in this area or any congressional delegation in this area or by any state legislator in this area is fully documented in the final public documentation of this study in the thing called Public Involvement. It is an appendix, and it has got them all reproduced. It has got them all in there, and there will be a separate appendix to just take the involvement of the final public meetings and put them in that study. Now, I don't know any further that I can go in adopting this study as it evolves up the ladder of implementation or execution or acceptance or whatever may be done with it. I don't know that I can do any more than that.

The State, I am sure, you can recognize by their statement, has already recognized your non-acceptance and publicly in this area as well as stated at previous meetings in their statement tonight.

They have not accepted Plan C. They have, in fact, said they would not accept Plan C, unless the people in the Three Rivers Watershed, and not or but and the people in this area want it.

MR. KARL:

Were you before Congress the 13th and 14th of last month

1
2 to explain this study?

3 COLONEL MOORE:

4 No, sir. I was not before Congress the 13th and 14th
5 of last month to explain this study.

6 MR. KARL:

7 Well, I got a letter from Senator Taft, and he said this
8 plan was before Congress, this last May the 13th and 14th.

9 Here tonight we come with a bunch of new hanky-panky.

10 I thought the way Mr. Damschroder said here that Ashbrook
11 wondered what's the matter. In fact, we're in the process
12 of getting petitions now. We can get a hundred persons to
13 sign and back us up in this area clear to Fremont. If you
14 want us to get them, I will get them. We'll accept the
15 challenge, and we'll produce it.

16 COLONEL MOORE:

17 It is not, sir, a fight between you and I.

18 MR. KARL:

19 I know, but I say, I want you to convey the message on
20 up.

21 COLONEL MOORE:

22 I assure you, sir, that I am conveying that message as
23 best I know how. If you have provided me a piece of document
24 that's provided in the study brochure, it will go up with the

total package, and it has been summarized. I attempted to summarize it tonight as best I could from previous public meetings, and it certainly will enhance it from this public meeting as it goes up the study effort, which will, in fact, end with the conclusion that Plan C is not acceptable, not doubtful, but is not acceptable for citizens of Northeast Ohio.

UNIDENTIFIED MAN #2:

Who authorized this study, and who paid for it?

COLONEL MOORE:

The study was authorized, I believe, by the Public Works Committee and funded by the Public Works Committee. I am talking about the Public Works Committee in Congress, the Federal Government.

UNIDENTIFIED WOMAN #1:

Wasn't this plan tried about 50 miles east of here a few years ago, and they didn't want it, so you brought it here 50 miles west?

COLONEL MOORE:

No. Yes and no.

As I explained, I think in previous public meetings, the feasibility study looked at a total land concept at that time recognizing that there wasn't sufficient land in the

1
2 Cleveland Watershed basin to do a total land concept study
3 and looked in the area just above you. Or below you, as the
4 case may be.

5 And it proved feasible to put it all on land. The
6 infeasibility of that, again, was the fact that it was taken
7 out of the Lake Erie basin, and there was the cost to do that
8 and to bring the water back because of the requirement of the
9 U.S. and Canadian international agreement on the Lake Erie
10 Watershed required bringing it back, which proved it to be
11 from a cost point of view infeasible. It was not publicly
12 acceptable in that area.

13 We have looked at this area, because it does retain the
14 water in the Lake Erie basin, and, therefore, it gets away
15 from that criteria. We still have found in our public
16 involvement that this is not publicly acceptable in this - ..
17 If, in fact, it were engineeringly feasible and institutionally
18 sound, even, I might add, without the public acceptance, it is
19 currently institutionally unsound for the State, because there
20 is no way to administer it. We haven't found a way to adminis-
21 ter it.

22 So, it has two strikes against it. Public acceptability,
23 which is the larger strike, and institutional infeasibility
24 at this point in time, because there is no institutional agency

short of the State that is currently in existence to operate it.

I don't know how you assure the Cleveland citizens that you will always grab hold of the end of those pipelines and get rid of everything that comes through it, and I don't know how they assure you that everything that comes through it is the standard that will meet the conditions you need out here and the amount consistent with the designs. Those are the kinds of institutional problems I am talking about.

It is fair to say that, yes, we looked at the feasibility aspect of this study, which was a total piece of this study in an area here for, No. 1, it was proved economically unsound, because you had to return the water, and No. 2, it was not welcomed publicly. We are again looking at it.

It is economically sound here. It is not publicly acceptable. I gathered that very strongly. Does that answer your question, sir, and does that answer yours, sir?

That's about the best I can answer.

Yes, sir.

UNIDENTIFIED MAN #3:

You mentioned that this plan may be acceptable to the people of Cleveland. That's just the point that could kill us. There is about how many more up there, and if the majority

wants it, what chance have we got?

3 | COLONEL MOORE:

4 No, sir. I'm sorry. I tried not to leave that impression.
5 The impression I tried to leave you is that Dr. Whitman's
6 statement, in my view, means that it must not be only
7 acceptable to them, because they should have a say in their
8 acceptability.

UNIDENTIFIED MAN #3:

10 Look what could happen to our legislators here. We've
11 only got two or three here, and there are dozens up there.
12 They could get snowed under.

COLONEL MOORE

14 As I read Dr. Whitman's statement, and I understand his
15 conversations with me were that it must be publicly acceptable
16 to you. Is that not a correct interpretation?

I quote, which is a joint statement from the two departments, "At this time the State of Ohio will not consider alternative C as one of the viable alternatives unless the public in the Three Rivers Watershed area and the North Central area requests the State to consider it among the alternatives."

I can only say to you that my discussion with Dr. Whitman
means the very staid definition of the "and." It takes both

1
2 sides of that equation to it.

3 MR. GENE SLAGH:

4 Could I make a statement, sir?

5 COLONEL MOORE:

6 Yes.

7 MR. GENE SLAGH:

8 Thank you. I don't know if it is quite so important
9 to tape all this as to what I am going to say, but there are
10 a few points that I want to make crystal clear.

11 First is this. There is a solid waste and sewage problem
12 nationally and state-wide. As a result of that, the United
13 States Congress authorized this survey. It has been paid for
14 in the entirety by the United States Government.

15 Now, I attended the first meeting at New Washington,
16 and Colonel Moore was there that evening and I thought he
17 was fair that night. He pointed out the problems that we
18 faced if we went into this type of problem. I think he
19 has been fair with us again tonight. I think it is an
20 excellent survey. It just so happens that we don't want any
21 part of it in this area here.

22 On the other hand, some of you may say it is a complete
. waste of money. I don't want to predict too much, but I am
going to stick my neck out a little bit. When you go down to

1
2 Cadiz tomorrow night for the last meeting, you will find a
3 much more responsive group, and I think when you go down there,
4 you will not only find a responsive group, but you will find a
5 majority of the people in that area for the support of it.
6 I think you have to understand why.

7 That land has been mined and stripped and made the farms
8 looked like plowed fields as a result of taking coal out of it.
9 When you start to think that the City of New York City is
10 thinking in terms of sending trainloads, if you please, of
11 solid waste by train clear down to Cadiz, Ohio, and Cleveland
12 is planning on doing the same thing, that is how serious this
13 problem is.

14 I wish I could stand here before you tonight and say this
15 is the way to solve it. But I don't think anybody has that
16 answer to that anyplace or anywhere.

17 Now, that is what makes the problem difficult. As soon
18 as this problem broke in this area, I went to Dr. Whitman,
19 and I'm glad to see you folks read into the record the
20 stand that Dr. Whitman has made on behalf of the EPA in Ohio,
21 and that statement is simply this:

22 They will support no plan without the approval of the
23 local people.

24 Now, that is what I reported in my weekly report many

1
2 weeks ago. Not all the newspapers and radio use it, but many
3 of them do so the record is perfectly clear.

4 Now, I want you to also understand that even though I
5 serve on this environmental and agricultural committee of
6 the Ohio Senate, I am the only man on that committee that
7 owns a farm that grows grain on it. I am the only one of
8 a group of nine.

9 Most of you don't think of me as a farmer, and the way
10 the weather has been, I haven't been a very good farmer.
11 I haven't planted any beans yet. We quit planting corn
12 because of the date. So, I understand your problem, but I
13 want to remind you that we have on that committee a group of
14 people from the metropolitan areas that have a very serious
15 environmental problem, even though these Congressmen and
16 United States Senators are against it, there is somebody who
17 voted for it in the United States Congress. Don't think they
18 didn't; it wouldn't have passed.

19 Now, the problem is this: We have a very serious problem.
20 and just because tonight you are against it, I think it is
21 only fair to say, Colonel Moore, it is still a live issue and
22 will be a live issue for many years to come. I think the
statement made by Mr. Nelson, President of the Chamber of
Commerce in Mansfield and Mr. Snell, President of the Farm

1
2 Bureau and many of the others here that are interested, there
3 have been many interesting statements and very mature state-
4 ments and not emotional statements. I have been through much
5 of that, but I just want to say a word to you from Fremont.

6 You might be interested in knowing that we down here
7 appreciate your support, but you also ought to know if they
8 don't build it down here, they might build it in Fremont.

9 UNIDENTIFIED MAN #4:

10 We're quite aware of that. I'm sure.

11 MR. GENE SLAGH:

12 All right. You are already aware of this. I am
13 particularly concerned about this, because this project would
14 cover six out of the eight counties that I represent in the
15 Ohio Senate, and five of those counties are represented here
16 tonight. So, I think you have said enough.

17 I just wanted you to understand, because government is a
18 lot more complex. If you haven't been in it, you don't fully
19 appreciate where it is. Maybe the best thing for me to do
20 tomorrow is to vote against that water bill for Ohio and let
21 the federal government take the rap.

22 COLONEL MOORE:

23 Thank you very much, sir, for your comments.

24 I would only like to add there are three plans that don't

2 affect you that from an engineering point of view and a
3 feasibility point of view are viable plans.

4 Therefore, in the analysis of four plans, if there is that
5 much public unacceptability, there need not be any further look
6 at that plan. There are other solutions, and that's the way I
7 read it. I promised you that when I started the study. I told
8 you I would not weaken from that position, and I have not
9 weakened from that position. And you have stated your
10 position. I have asked for a restatement of that position
11 tonight. I have gotten that restatement, and I shall send
12 that restatement to whoever the hell wants to read it.

13 The Corps of Engineers serves the public of the United
14 States through the Congress for civil works. This is a civil
15 works study, and by damn you are going to be heard in that
16 study.

17 Robert Harrer?

18 MR. ROBERT HARRER:

19 What I wanted to say has already been said. I have two
20 statements here.

21 In our fertilizer we're using right now, you made the
22 statement that we'll be using three or four times as much as
23 we're using right now. Supposing they get fertilizer in the
24 stream now. If we get three or four times the amount as we're

1
2 using now, are we going to pollute the streams and these
3 crops?

4 COLONEL MOORE:

5 No. I said we're going to be responsible for it for
6 designing such that the pollution comes from the stream, and
7 that's why we're damned certain about the ten concerns that
8 you are concerned about.

9 I can't be any more fair than that. But it is a viable
10 system, and it can be designed to work. It is a good way to
11 recycle the nutrients in that water, provided it is designed
12 properly.

13 I don't have right now enough design data to tell you
14 whether it is designed properly or not, but I've got a list
15 of experts right there that are going to look at it from
16 Ohio State from an agricultural point of view. I have
17 looked at it from an engineering point of view. I have
18 chastised myself with the problem of the flooding aspect
19 of it. It can be solved. We have to solve the agricultural
20 aspects too. Those can be solved.

21 It may make a plan such that all that water can't come
22 this way, or it may make a plan that none of that water can
23 come this way, but it will at least leave a trail of
24 documented data so that if you want to use it for your own

1 use, you will at least have some good background to use it by.

2 Okay?

3 Mr. Falter. Is that who I just had?

4 Is Mr. Bernard Falter still here?

5 (No response.)

6 COLONEL MOORE:

7 Mr. Vincent Falter.

8 (No response.)

9 COLONEL MOORE:

10 Mr. Don Fenesee?

11 MR. DON FENESEE:

12 I'll pass.

13 COLONEL MOORE:

14 Thank you, sir.

15 Mr. Claude Bauer?

16 MR. CLAUDE BAUER:

17 Time is getting short, and thank you, Colonel Moore,
18 for all the research. I think we owe it to our forefathers
19 and God who created us for this land. I don't think we can
20 leave it in a better state than the way he gave it to us.

21 That's the way I feel.

22 COLONEL MOORE:

23 I will just thank you for your patience tonight, because

I know this is a pressing problem on you. I have known it all along, and I have tried to handle it as best I could without getting in an uproar over it between you and I. I have only looked at designs and the feasibility alternatives and the cost implications. After all, you have got to pay for it in the final analysis, but if your public concern is worth more than that greenback dollar difference, then by damn that's what ought to count, because there is not that much greenback dollar difference.

I really thank you for your patience in guiding with me through this study. It hasn't been easy for me, but I suppose in the final analysis, it will be a hell of a lot easier for me than you, because you have got to live with it if it ever occurs. That's not to say that it ought not to occur. I just tell you it ought not to occur unless it is properly designed and can be proven to you that it will work, and it damned sure ought not to have all the capital investment in it until that proof is positive. I have said that to you all along, and I will repeat it again. There is no desire that I know of in my professional ladder to force the issue of a total land treatment plan on the public of North Central Ohio. There is a concern in the Clean Water Act Amendment of 1972, and as the good State Senator said, it is in all

the minds of everybody in the metropolitan area of what to do about this problem at the least cost and greatest effectiveness and without too much public concern. You have the same problem in your own area. It is just at a smaller scale. It is the very same problem. You probably have a greater stream problem without knowing it than Cuyahoga does. There is a solution to theirs, and I don't know if there is a solution to the sediment problem at all.

I really do thank you for your patience. I just want you to understand that the county public meetings that we have structured for this case were structured so you could be heard, and I just want you to know that you will be heard.

MR. BILL TAYLOR:

My name is Bill Taylor, Councilman from Willard, Ohio. I am not speaking for Council, because we made no public decision on this, although we have sent a resolution that we are not in favor of this for our area, but I want to say thank you for the way you have presented and conducted this meeting, and I would like to say thank you for all of our people here for your participation and your understanding of a real touchy situation here. Thank you all.

COLONEL MOORE:

Thank you very much, sir, and thank you again for showing

1
2 up. I am going to try not to come down here again, because
3 it seems every time I come it rains, and for the subject I
4 have to present that's a hell of a thing to have to fight.
5 Thank you very much. I know you have been through hell in
6 the last two weeks with the rain itself, and thank you very
7 much.

8 (At 11:00 o'clock p.m. the meeting was concluded.)
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Exhibit 1

LADIES AND GENTLEMEN--

SLIDE 1 ON

IT IS A PLEASURE TO RETURN TO THE NORTH CENTRAL **OHIO** AREA TO PRESENT THE FINAL SERIES OF PUBLIC HEARINGS IN THE PLANNING PROCESS BEING ACCOMPLISHED BY THE CORPS OF ENGINEERS FOR THE STATE OF OHIO TO DEVELOP LOGICAL AND ACCEPTABLE CONCEPTS FOR WASTEWATER MANAGEMENT FOR THE AREA DEPICTED ON THIS SLIDE. I WANT TO EXPRESS MY PERSONAL APPRECIATION FOR THE STATE OF OHIO CO-CHAIRING THEIR FINAL PRESENTATIONS. I PARTICULARLY DESIRE TO THANK DR. WHITMAN AND MR. NYE FOR TAKING TIME FROM THEIR BUSY SCHEDULES TO LEND THEIR SUPPORT BEHIND THE OBVIOUS IMPORTANCE OF THIS PLANNING EFFORT. AND BEFORE I FORGET, THERE ARE OTHER PERSONNEL IN THE STATE WHO HAVE GREATLY CONTRIBUTED TO THIS EFFORT. THEY ARE MR. JIM SCHAFER, DEPUTY TO MR. NYE; MR. BILL SELLERS, CHIEF, PLANNING DIVISION, OHIO EPA; MR. ART WOLDORF, OUR POINT OF CONTACT FOR DNR AND EPA DOING MOST OF THE STUDY, AND MR. GEORGE WATKINS, SECRETARY-TREASURER, THREE RIVERS WATERSHED DISTRICT. THE LAST TWO PEOPLE HAVE WORKED CLOSELY WITH THE CORPS NOT ONLY IN WASTEWATER BUT IN THE DEVELOPMENT OF THE CONCEPTS. FOR THIS WE ARE THANKFUL. WE WISH TO ALSO THANK YOU, THE PUBLIC WHO HAVE PROVIDED THE MOST TO THIS EFFORT THROUGH YOUR CONSTANT CONTACT WITH THE STUDY AND PROVISION OF WORTHWHILE INFORMATION WHICH AS WILL BE SEEN HAS GREATLY INFLUENCED THE RESULTS.

SLIDE 1 OFF

SLIDE 2 ON

DURING OUR PREVIOUS PUBLIC MEETINGS WE HAVE DETAILED FOR YOU THE SEVERAL STEPS WE WOULD FOLLOW IN THE DEVELOPMENT OF THIS STUDY. THEY ARE SHOWN NOW FOR REVIEW. WE AT THAT TIME WERE COMPLETED WITH THREE AND HAD ACCOMPLISHED SOME EFFORT IN ALL OTHER STEPS. WE ARE NOW COMPLETING THE STUDY WITH ONLY THREE FACTORS REMAINING PRIOR TO OUR SUBMISSION OF THE FINAL REPORT FOR REVIEW AT THE FEDERAL LEVEL. THESE THREE FACTORS ARE SHOWN ON THE NEXT SLIDE.

SLIDE 2 OFF

SLIDE 3 ON

THE FINAL PUBLIC INVOLVEMENT FROM THESE MEETINGS MUST BE ASSESSED AND APPROPRIATE CHANGES IN THE REPORT MADE.

THE OHIO STATE UNIVERSITY IS CURRENTLY EXAMINING THE AGRICULTURAL ASPECTS OF THE PLANS AND THEIR FINDINGS WILL HAVE AN IMPACT ON OUR FINAL CONCLUSIONS.

THE STATE OF OHIO MUST HAVE THE PREVIOUS TWO INPUTS PRIOR TO MAKING THEIR FINAL RECOMMENDATIONS IN ACCEPTING THE PLANNING EFFORT.

SLIDE 3 OFF

I WOULD LIKE TO REVIEW THE PROCESS OF REDUCTION OF THE 12 ALTERNATIVES TO THE SELECTION OF THE FOUR RETAINED PLANS. TO DO THIS I WILL SHOW EACH OF THE 12 PLANS AND STATE IN SUMMARY FASHION WHY THEY WERE RETAINED OR DISCARDED, REALIZING THAT NO PLAN IN TOTAL WAS RETAINED BUT THAT INSTEAD, EACH RETAINED PLAN WAS OPTIMIZED WITH RELATION TO THE BEST CHOICES FOR STORMWATER AND UNTREATED WASTE AND SLUDGE MANAGEMENT.

SLIDE 4 ON

PLAN 1 IS THE NORTHEAST OHIO PLAN UPDATED TO LEVEL 1 TREATMENT CRITERIA.

SLIDE 4 OFF

SLIDE 5 ON

PLAN 3 IS THE NEO PLAN UPDATED TO LEVEL II CRITERIA WHICH IS THE CORPS OF ENGINEERS INTERPRETATION OF THE 1985 GOALS IDENTIFIED IN THE WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972. PLANS 10 AND 11 JUST LOOKED AT THE COST DIFFERENCE BETWEEN ADVANCED BIOLOGICAL AND PHYSICAL CHEMICAL. SINCE THE COSTS DIFFERENTIALS WERE MINIMAL, THE DECISION BETWEEN THESE TWO TECHNOLOGIES BECOMES A CASE BY CASE, PLANT BY PLANT DECISION. THEREFORE PLANS 10 AND 11 WERE DISCARDED.

WITH RESPECT TO PLAN 1 AND PLAN 3, THE ONLY DIFFERENCE IS LEVEL OF TREATMENT AND SOME MINOR CHANGES IN PLANT LOCATIONS IN PLAN 3. THE STATE OF OHIO DESIRED THE RETENTION OF PLAN 1 AND THE UPDATE OF THAT PLAN TO LEVEL II CRITERIA; THEREFORE PLAN 3 WAS DISCARDED.

SLIDE 5 OFF

SLIDE 6 ON

I SHOULD TAKE ONE MINUTE TO SHOW THE COMPARISON OF LEVELS OF TREATMENT. THE LEVEL I, OHIO EFFLUENT STANDARDS AND LEVEL II, THE 1985 GOAL, ARE SHOWN HERE. WE RETAIN PLAN 1, WHICH WE CALL PLAN A FOR DEVELOPMENT, WITH THAT DEVELOPED TO LEVEL I CRITERIA AS PLAN A_I AND TO LEVEL II CRITERIA AS PLAN A_{II}.

SLIDE 6 OFF

SLIDE 7 ON

WE ALSO LOOKED AT TOTAL LAND TECHNOLOGY SCHEMES. PLANS 2 AND 4 TO LEVELS I and II, RESPECTIVELY, UTILIZED THIS TECHNOLOGY BY DEVELOPING TREATMENT SITES IN NORTH CENTRAL OHIO SINCE SUFFICIENT LAND IS NOT AVAILABLE WITHIN THE BASIN.

SLIDE 7 OFF

SLIDE 8 ON

PLAN 12 WAS ALSO DEVELOPED TO PLACE MORE OF THE LAND TREATMENT IN BASIN BY A VARIATION OF THE LAND TECHNOLOGY. NONE OF THESE TOTAL LAND SCHEMES WERE CONSIDERED ACCEPTABLE BECAUSE OF THE DECREASE IN FLOWS CREATED IN THE MIDDLE AND/OR LOWER CUYAHOGA BY THE TRANSPORT OF WATER TO NORTH CENTRAL OHIO.

SLIDE 8 OFF

SLIDE 9 ON

WE THEN LOOKED AT COMBINING TECHNOLOGIES. PLANS 5 AND 7 AT LEVELS I AND II, RESPECTIVELY, KEPT ALL TREATMENT WITHIN THE THREE RIVERS WATERSHED. THE UPPER, LESS DENSELY POPULATED RIVER BASIN AREAS UTILIZE LAND TECHNOLOGY. THE REMAINING UTILIZE AB/PC. THE COMPARATIVE COSTS AND OBVIOUS ADVANTAGE OF ALL WATERSHED TREATMENT OF THE PLANS CALL FOR ITS RETENTION FOR FURTHER STUDY.

SLIDE 9 OFF

SLIDE 10 ON

SINCE TOTAL LAND TECHNOLOGY SEEMED TO BE THE CHEAPER OF ALL TECHNOLOGIES AND PROVIDE FOR MAXIMUM RECYCLING OF THE BY-PRODUCTS OF THE TREATMENT SYSTEM, WE DEVELOPED PLANS 6 AND 8 AS MAXIMUM LAND TECHNOLOGY ALTERNATIVES ACCEPTABLE FROM THE STANDPOINT OF PROVIDING SUFFICIENT FLOWS^{IN THE CUYAHOGA} TO MAINTAIN FLOW RATE FOR MAXIMUM WATER USE PURPOSES. SOME OF CLEVELAND AND ALL OF AKRON ARE TREATED BY AB/PC. THIS PLAN IS RETAINED FOR FURTHER STUDY TO COMPLETE A SET OF PLANS TO PROVIDE MAXIMUM FLEXIBILITY FOR FUTURE DECISION. THIS IS THE FOURTH AND FINAL PLAN RETAINED AS SUGGESTED BY THE CORPS AND REQUESTED BY THE STATE.

SLIDE 10 OFF

SLIDE 11 ON

A FINAL PLAN, NO 9, WAS DEVELOPED TO DETERMINE THE COST/EFFECTIVITY OF FURTHER REDUCTION IN NUMBER OF PLANTS (REGIONALIZATION). THE NEO PLAN SEEMED TO BE THE OPTIMUM REGIONALIZATION. THEREFORE PLAN 9 WHICH PROVED MORE COSTLY WAS DISCARDED. THE BROCHURE, QUEST FOR QUALITY, AVAILABLE HERE TONIGHT WILL PROVIDE A SUMMARY OF THE INITIAL PHASE OF THE PLANNING EFFORT.

SLIDE 11 OFF

SLIDE 12 ON

I WILL NOW DISCUSS THE FINAL FOUR PLANS, OUR EVALUATION OF THESE PLANS IN CONSIDERATION OF ENGINEERING, COST, ENVIRONMENTAL, SOCIAL AND INSTITUTIONAL, AS WELL AS PUBLIC ACCEPTANCE. YOU MUST REALIZE THIS IS

A PRELIMINARY REPORT SUBJECT TO CHANGE WITH INPUT FROM THESE FINAL PUBLIC HEARINGS, THE OSU STUDY REPORT, AND STATE EVALUATION AND RECOMMENDATIONS AS WELL AS COMMENTS BY FEDERAL AGENCIES AS THE STUDY PROCEEDS UP THE NORMAL LADDER OF REVIEW. COPIES OF THE DRAFT SUMMARY REPORT HAVE BEEN PLACED IN LIBRARIES AND WITH LOCAL OFFICIALS AS WELL AS CONCERNED PUBLIC. I WILL ATTEMPT TO CONCENTRATE MY DISCUSSION ON THE PLAN THAT AFFECTS YOUR AREA.

SLIDE 12 OFF

SLIDE 13 ON

THE FINAL PLANS ARE DEVELOPED TO FULLY CONFORM TO THE:

1. DESIRES OF THE STATE OF OHIO WITH RESPECT TO STREAM QUALITY AND COMPATIBILITY WITH ONGOING EFFORTS KEYED TO THE NEO PLAN.
2. GOALS ESTABLISHED BY THE WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972.
3. 1972 WATER QUALITY AGREEMENT BETWEEN CANADA AND THE U. S.
4. GUIDANCE FROM THE OFFICE, CHIEF OF ENGINEERS.

SLIDE 13 OFF

SLIDE 14 ON

WITH RESPECT TO THE FINAL FOUR PLANS:

PLAN A, TO LEVEL I, DUPLICATES THE GEOGRAPHICAL LAYOUT OF TREATMENT FACILITIES IN THE THREE RIVERS WATERSHED PORTION OF THE NORTHEAST OHIO WATER DEVELOPMENT PLAN FOR WATER QUALITY CONTROL. THE PLAN IS REGIONAL, WITH A TOTAL OF 26 PROPOSED MUNICIPAL PLANTS, EIGHT OF WHICH ARE NOW IN EXISTENCE. THE CONSTRUCTION IS PHASED TO MEET CURRENT APPROPRIATE

STATE OF OHIO STANDARDS AND LEVEL I CRITERIA FOR 1977 AND 1983 AS REQUIRED BY PUBLIC LAW 92-500. AFTER 1983, PLAN A TO LEVEL I MAINTAINS THAT WATER QUALITY AND MERELY ENLARGES FACILITIES TO ACCOMMODATE INCREASED FLOWS.

PLAN A TO LEVEL II IS THE SAME GEOGRAPHICAL LAYOUT OF PLAN A TO LEVEL I. THE CONSTRUCTION OF THIS PLAN AS WELL AS PLANS B AND C IS PHASED TO MEET APPROPRIATE STATE OF OHIO STANDARDS, AND LEVEL I AND II CRITERIA FOR 1977, 1983, AND 1985 AS REQUIRED BY PUBLIC LAW 92-500.

SLIDE 14 OFF

SLIDE 15 ON

PLAN B COMBINES THE TECHNOLOGIES OF ADVANCED BIOLOGICAL, PHYSICAL-CHEMICAL, AND LAND TREATMENT TO ACHIEVE LEVEL II CRITERIA. A SIGNIFICANT ASPECT OF THIS PLAN IS THAT, AS IN BOTH LEVELS OF PLAN A, ALL FEATURES ARE WITHIN THE THREE RIVERS WATERSHED AREA.

SLIDE 15 OFF

SLIDE 16 ON

PLAN C PROVIDES FOR THE TRANSPORT OF WASTEWATER GENERATED WITHIN THE THREE RIVERS WATERSHED AREA TO A SUITABLE LAND TREATMENT AREA IN NORTH CENTRAL OHIO, AS WELL AS PROVIDING TREATMENT WITHIN THE THREE RIVERS WATERSHED.

ULTIMATELY, 81 PERCENT OF THE MUNICIPAL/INDUSTRIAL AND 74 PERCENT OF THE URBAN STORMWATER RUNOFF WOULD BE TREATED BY THE LAND TREATMENT TECHNOLOGY, WITH 69 PERCENT OF THE MUNICIPAL/INDUSTRIAL WASTEWATER AND 55 PERCENT OF THE STORMWATER RUNOFF BEING TRANSPORTED TO A SINGLE LAND TREATMENT SITE IN NORTH CENTRAL OHIO.

A TRANSMISSION TUNNEL CONVEYS WASTEWATER AND STORMWATER RUNOFF FROM THE CLEVELAND METROPOLITAN AREA TO THE NORTH CENTRAL OHIO AGRICULTURAL AREA. THE 183-SQUARE MILE WESTERN LAND TREATMENT SITE LIES IN PORTIONS OF HURON, SENECA, CRAWFORD, AND RICHLAND COUNTIES AS SHOWN. THE AKRON PLANT IS THE ONLY ADVANCED BIOLOGICAL TREATMENT PLANT. IT DISCHARGES PURIFIED WATER DIRECTLY TO THE CUYAHOGA RIVER. THIS TREATMENT PLANT WILL BE EXPANDED AND MODIFIED TO TREAT SEWAGE TO A LEVEL PERMITTING BODY CONTACT SPORTS IN THE CUYAHOGA RIVER. THE DISCHARGE FROM AKRON WILL INCREASE THE FLOW OF THE CUYAHOGA RIVER DURING LOW FLOW PERIODS. STREAMFLOW WILL ALSO BE AUGMENTED BY THE UPSTREAM LAND TREATMENT FACILITIES THAT SECONDARILY TREAT AND STORE WASTEWATER OVER THE WINTER AND APPLY THE TREATED WASTEWATER TO THE LAND DURING THE SUMMER WHEN NATURAL FLOWS ARE AT THEIR LOWEST LEVEL AND WHEN MUNICIPAL WITHDRAWALS CREATE THE MOST IMPACT.

ALTHOUGH PLAN C REPRESENTS A SIGNIFICANT DEPARTURE FROM TRADITIONAL WASTEWATER TREATMENT PRACTICES, ITS PHASING IS PROGRAMMED TO RECOGNIZE THE CURRENT LOCAL PLANNING AND THE EARLY PLANNING OF THE NORTHEAST OHIO WATER DEVELOPMENT PLAN. THE EVOLUTION FROM THE CURRENT TREATMENT PLANT SYSTEM TO THE ULTIMATE PLAN C CONFIGURATION WILL NOT BE CULMINATED UNTIL THE YEAR 2000. AS NOW ENVISIONED, NO LAND APPLICATION OF WASTEWATER IS NECESSARY PRIOR TO 1983. THE DECISION AS TO WHETHER THE NORTH CENTRAL OHIO LAND TREATMENT AREA IS CHOSEN CAN BE POSTPONED UNTIL 1980. IN THIS MANNER, FULL ADVANTAGE CAN BE TAKEN OF THE ACCUMULATING SCIENTIFIC DATA FROM VARIOUS RESEARCH AND DEMONSTRATION PROJECTS THROUGHOUT THE NATION.

PLAN C IS CURRENTLY CONFIGURED TO PROVIDE A LEAST COST ALTERNATIVE FOR COMPARISON WITH OTHER TECHNOLOGIES. PLAN C CANNOT BE IMPLEMENTED AS CONFIGURED, BUT SHOULD BE RECONFIGURED IN LIGHT OF THE CONCERNS OF THE CITIZENS OF NORTH CENTRAL OHIO IF IT IS EVER TO BE ACCEPTABLE.

SLIDE 16 OFF

BLANK SLIDE ON

TO FACILITATE PUBLIC EVALUATION OF THE ALTERNATIVES IMPACT TABLES AND PREFERENCE TABLES HAVE BEEN PROVIDED AS WELL AS CONCLUSIONS THE DISTRICT HAS DEVELOPED CONSIDERING ALL THE WORK AND PUBLIC INVOLVEMENT TO DATE. I WILL NOT TAKE TIME TO SHOW OR DISCUSS THE IMPACT TABLES OR PREFERENCE SETS. I WILL ANSWER QUESTIONS LATER CONCERNING THESE. I WOULD LIKE TO DISCUSS THE COSTS OF THE ALTERNATIVE PLANS, PUBLIC ACCEPTANCE TO DATE AND CONCLUSIONS.

BLANK SLIDE OFF

SLIDE 17 ON

THE COSTS OF THE PLANS AS CONFIGURED ARE SHOWN ON THIS CHART. NOTE THAT PLANS AI AND AII ARE THE SAME COST UNTIL AFTER 1980. THIS INDICATES THAT PLAN AII LOGICALLY GROWS OUT OF PLAN AI BY FURTHER ADDITION OF TREATMENT PROCESSES ON EXISTING PLANTS. THEREFORE, A DECISION ON PLAN A TO LEVEL II NEED NOT BE MADE UNTIL 1980. THE GROWTH IN ANNUAL AVERAGE COSTS FROM CURRENT PLANTS TO THE FINAL ALTERNATIVE IS DEMONSTRATED AS IS THE COST DIFFERENCE BETWEEN LEVEL I AND LEVEL II TREATMENT.

SLIDE 17 OFF

SLIDE 18 ON

TOTAL DECISION FLEXIBILITY IS INHERENT IN THIS PLANNING STUDY. THAT FLEXIBILITY IS DEMONSTRATED BY THIS CHART. I WOULD LIKE TO DISCUSS EACH DECISION POINT INDIVIDUALLY.

SLIDE 18 OFF

SLIDE 19 ON

FIRST, A DECISION TO GO TO PLAN A, LEVEL I, PLAN B, OR PLAN C, MUST BE MADE IN 1975.

IF PLAN C IS THE CHOICE, THE DECISION IS FINAL. THE COST OF GOING TO PLAN C IN 1975 VERSUS THE PLAN C AS CURRENTLY CONFIGURED ON AN AVERAGE ANNUAL BASIS IS \$16 MILLION PER YEAR FOR 50 YEARS. THERE ARE NO MAJOR PUBLIC CONCERNs THUS FAR EXPRESSED WITH THE ACCEPTABILITY OF PLAN B OR AI. SINCE THOSE PLANS CALL FOR ALL TREATMENT IN BASIN, THERE ARE NO MAJOR INSTITUTIONAL PROBLEMS. AN AGENCY SUCH AS THE THREE RIVERS WATERSHED DISTRICT COULD BE GIVEN THE NECESSARY AUTHORITY AND RESPONSIBILITY TO EITHER MONITOR THE COMPLIANCE WITH AN OVERALL PLAN WITH EXECUTION BY LOCAL GOVERNMENTS OR BE GIVEN TOTAL RESPONSIBILITY FOR EXECUTION.

PLAN C HAS MET WITH THE PUBLIC CONCERNs SHOWN ON THIS CHART.

SLIDE 19 OFF

SLIDE 20 ON

WE HAVE ADDRESSED EACH OF THESE CONCERNs IN THE REVIEW OF THESE PLANS AND WILL ADDRESS THEM IN DETAIL LATER. WE HAVE ENGINEERING SOLUTIONS TO MOST OF THE CONCERNs BUT THESE SOLUTIONS ADD TO THE COST OF PLAN C SUCH THAT IN MY VIEW IT WILL NO LONGER BE THE LEAST COST OPTION BUT WILL BE APPROXIMATELY EQUAL IN COST TO PLAN B. THEREFORE THE FINAL DECISION BETWEEN PLANS A, B OR C WILL NOT BE MADE ON COST BUT IN THE MAIN BE MADE ON PUBLIC ACCEPTABILITY, INSTITUTIONAL CONSTRAINTS, AND THE ABILITY TO

REUSE THE BY-PRODUCTS OF THE WASTEWATER SYSTEM. LAND TREATMENT DOES OFFER THE BEST ABILITY TO RECYCLE THE BY-PRODUCTS IF CROPS ARE GROWN AND HARVESTED ON THAT LAND. THE INSTITUTIONAL PROBLEM OF WHO OPERATES A SYSTEM SUCH AS DEFINED IN PLAN C HAS NOT RECEIVED A GOOD SOLUTION.

WHETHER THE CITIZENS OF NORTH CENTRAL OHIO, GIVEN THE RECOMMENDED ENGINEERING SOLUTIONS TO THESE CONCERNs WITHOUT DEMONSTRATING THEIR EFFECTIVITY WITH ACTUAL DATA, WILL ACCEPT PLAN C IN 1975 OR AT ALL WILL HAVE TO BE DETERMINED IN THESE FINAL PUBLIC HEARINGS..

BASED ON OUR INITIAL PUBLIC HEARINGS, PUBLIC ACCEPTANCE BY YOU OF TREATMENT OF CLEVELAND WASTEWATER ON NORTH CENTRAL OHIO SOIL IS DOUBTFUL IN THE EARLY TIME FRAME IF NOT FOR SOME TIME TO COME. OUR LITERATURE SEARCH SHOWS THAT VERY LITTLE DATA EXISTS TO PROVE LAND SYSTEMS EFFECTIVITY FROM EXISTING PROJECTS IN REGIONS SIMILAR TO OHIO. THEREFORE, MUCH WORK IN MONITORING AND EVALUATION IS NEEDED TO CONVINCE THE CITIZENS OF THIS AREA. I WOULD SAY THAT YOU SEEM NOT TOTALLY OPPOSED TO THE LAND TREATMENT CONCEPT AS A SOLUTION TO YOUR OWN WASTEWATER MANAGEMENT NEEDS IF PROPERLY DESIGNED AND PROVEN TO WORK.

SLIDE 20 OFF

SLIDE 21 ON

IF PLAN B WERE CHOSEN IN 1975, THE DECISION TO RETAIN PLAN B OR ACCEPT PLAN C CAN BE MADE IN 1980. PLAN A, OR ALL WILL HAVE BEEN FOREGONE. THE ACCEPTABILITY OF PLAN C WILL AGAIN HAVE TO BE DETERMINED.

SLIDE 21 OFF

SLIDE 22 ON

IF PLAN A1 WERE THE 1975 CHOICE, ANY ALTERNATIVE TO INCLUDE PLAN A1 CAN BE THE FINAL DECISION IN 1980. THIS COULD INCLUDE ALSO A MODIFICATION

TO ACCEPT A PLAN BI WITH THE ADVANCED BIOLOGICAL/PHYSICAL CHEMICAL TREATMENT TO LEVEL I ONLY.

IN PLAN B OR C THE CONCERNS OVER AERATED LAGOONS CAN BE RESOLVED WITH SUBSTITUTION OF ACTIVATED SLUDGE WITH AN ADDED COST ASSOCIATED THEREWITH. PLAN ACCEPTABILITY STILL MUST BE DETERMINED.

SLIDE 22 OFF

SLIDE 23 ON

THE COST COMPARISONS ON AN ANNUAL AVERAGE COST BASIS FOR EACH POSSIBLE DECISION IS DISPLAYED HERE. YOU WILL NOTE, THE DELAY OF A FINAL DECISION TO GO TO ANY PLAN INCREASES THE COST OF THAT PLAN. FOR INSTANCE, IF ONE CHOSE PLAN B IN 1975 AND RETAINS PLAN B AS A FINAL ALTERNATIVE THE ANNUAL COST IS \$244 MILLION. IF ONE PROCEEDS TO A FINAL DECISION ON PLAN B BY FIRST MAKING A DECISION TO GO TO PLAN AI IN 1975, THE ANNUAL COST OF PLAN B IS \$258 MILLION. THIS DIFFERENCE IS ASSOCIATED WITH THE REQUIREMENT TO BUILD SECONDARY TREATMENT IN BASIN PRIOR TO 1977 TO MEET PL 92-500 GOAL AND THIS REQUIRES CONTINUATION OF THE ACTIVATED SLUDGE PLANTS. IN THE UPPER BASIN INSTEAD OF INITIALLY CONSTRUCTING THE AERATED LAGOONS SPECIFIED IN EARLY IMPLEMENTATION OF PLAN B. THE SAVINGS IN COST OF GOING TO PLAN C IN 1975 OVER THAT OF DELAYING THAT DECISION TO 1980 IS AS MUCH AS \$30 MILLION ANNUALLY.

IN CONCLUSION:

1. ~~THE SUMMARIES OF THE IMPACTS OF THE FOUR ALTERNATIVE PLANS DISPLAYED IN THE PREFERENCE SETS THAT YOU HAVE PROVIDED THE PRELIMINARY BASIS FOR CHOICE AMONG THE ALTERNATIVES BY VARIOUS MEMBERS OF THE PUBLIC. THE PREFERENCE SETS PROVIDE DATA FROM WHICH A NUMBER OF CONCLUSIONS CAN BE DRAWN CONCERNING FUTURE DECISIONS.~~

2. A PROGRAM IS CURRENTLY UNDERWAY TO UPGRADE THE EXISTING INCINERATOR FACILITIES IN CLEVELAND. THE STATE MUST FOREGO THIS PLAN IF STRIPMINE APPLICATION IS THE PREFERRED OPTION FOR SLUDGE TREATMENT.
3. THE ENERGY AND CHEMICAL REQUIREMENTS FOR ANY OF THE FOUR PLANS ARE INCREASED OVER CURRENT CONSUMPTION. THIS IS ALSO TRUE OF MANPOWER NEEDS TO ADEQUATELY OPERATE THE SYSTEMS.
4. MANY INCIDENTAL BENEFITS ARE DERIVED FROM EACH OF THE ALTERNATIVE PLANS AND ARE DISCUSSED IN THE HANDOUT.
5. STORMWATER IS COLLECTED AND TREATED IN QUANTITIES SUFFICIENT TO ACCOMMODATE 97.3 PERCENT OF THE TOTAL AVERAGE ANNUAL URBAN STORMWATER RUNOFF.
- THE DECISION TO TREAT STORMWATER TO LEVEL I OR TO LEVEL II IS CRITICAL TO THE PLAN SELECTION DECISIONS. IF PLAN C IS SELECTED IN 1975, LEVEL II TREATMENT IS MORE COST EFFECTIVE, SINCE LAND TREATMENT ACCOMPLISHES LEVEL II TREATMENT. IF ANY OTHER PLAN IS CHOSEN IN 1975, THE DECISION AS TO LEVEL II TREATMENT OF STORMWATER CAN BE MADE IN 1980 ALONG WITH THE SELECTION AMONG THE PLANS. THIS ALLOWS TIME TO MONITOR STREAM QUALITY RESULTING FROM LEVEL I TREATMENT. IF IT IS DECIDED LEVEL I TREATMENT OF STORMWATER IS ADEQUATE, SIGNIFICANT SAVINGS CAN BE ACHIEVED.
THIS CONCLUSION CAN AFFECT THE CHOICE OF PLANS IN 1980.
- ✓ 6. ACCESS TO LAND NECESSARY FOR THE LAND TREATMENT TECHNOLOGY MAY BE ACCOMPLISHED BY SEVERAL METHODS, INCLUDING PURCHASE, LEASE, EASEMENT AND COOPERATIVE AGREEMENTS. OF THESE OPTIONS, PURCHASE IS THE LEAST DESIRABLE.
- ✓ 7. THE SYSTEMS CONFIGURED IN PLAN A-I, A-II, AND PLAN B CAN BE MANAGED BY AN EXISTING GOVERNMENTAL ENTITY SUCH AS THE THREE RIVERS

WATERSHED DISTRICT SINCE THE TOTAL SYSTEM IS WITHIN THE BASIN. PLAN C PRESENTS A VERY DIFFICULT INSTITUTIONAL PROBLEM SINCE THE CONFIGURATION OF THE SYSTEM DEFINED BY THAT PLAN ENCOMPASSES MANY COUNTIES AND MANY WATERSHEDS. THIS PLAN WOULD CALL FOR STATE CONTROL OR A SPECIAL GOVERNMENTAL AGENCY TO OPERATE IT.

8. IF PROJECTS ARE CONSTRUCTED PRIOR TO 1975, THEY CAN BE MONITORED TO OBTAIN VERIFICATION OF THE DESIGN CRITERIA AS WELL AS MEASUREMENT OF THE BENEFITS ACHIEVED. THIS WOULD INSURE THAT WELL-INFORMED DECISIONS ARE MADE AT THOSE CRITICAL DATES PREVIOUSLY IDENTIFIED AND THAT THE PUBLIC CONCERNs AND ENGINEERING PROBLEMS CAN BE RESOLVED IN THE DESIGN STAGE.

9. EARLY IMPLEMENTATION AND CONSTRUCTION OF COMPONENTS OF THE VARIOUS PLANS WOULD PROVIDE EXPERIENCE NECESSARY FOR THE DECISIONS THAT MUST EVENTUALLY BE MADE BY STATE AND LOCAL OFFICIALS IN OHIO IN CHOOSING FROM AMONG THE ALTERNATIVE PLANS AND/OR THEIR COMPONENTS. THESE PROGRAMS TO INCLUDE PROGRAMS FOR TREATMENT OF WASTEWATER GENERATED IN THE NORTH CENTRAL OHIO AREA ARE LISTED IN YOUR HANDOUT.

✓ 10. THE EXECUTION OF ANY PLAN OR COMPONENT THEREOF SHOULD BE LEFT TO THE DECISION OF STATE AND LOCAL GOVERNMENTS AND THE PUBLIC AT LARGE. THE EARLY IMPLEMENTATION FEATURES SHOULD BE FULLY COORDINATED WITH APPROPRIATE LOCAL, STATE, AND FEDERAL AGENCIES.

✓ 11. ALTHOUGH LOCAL GOVERNMENTS AND THE CITIZENS OF NORTH CENTRAL OHIO HAVE EXPRESSED OPPOSITION TO PLAN C, THEY HAVE NOT EXCLUDED THE LAND TREATMENT TECHNOLOGY FROM CONSIDERATION FOR TREATING THEIR OWN WASTEWATER.

✓ 12. THE ASSUMPTION AND PROJECTIONS OF DATA INCLUDED IN ANY PLANNING STUDY MUST BE CAREFULLY MONITORED AS THE FUTURE UNFOLDS. CHANGES IN EITHER THE ASSUMPTIONS OR PROJECTIONS WILL CHANGE PORTIONS OF THE PLANS. THIS IS THE MAJOR REASON FOR PROVIDING A MULTIPLE MEANS APPROACH AND FOR RETAINING FLEXIBILITY FOR THE DECISION PROCESS RELATING TO WASTEWATER MANAGEMENT IN THE THREE RIVERS WATERSHED AREA.

✓ 13. ANY RECOMMENDATIONS EMANATING FROM THIS STUDY MUST BE MADE BY THE STATE OF OHIO.

SLIDE 23 OFF

SLIDE 24 ON

I INVITE YOUR WRITTEN REVIEW OF THIS PLANNING EFFORT. YOUR COMMENTS WILL BE CONSIDERED IN THE FINAL REPORT WHICH IS SCHEDULED FOR PUBLICATION IN AUGUST, AND THEY WILL BE REPORTED IN A SPECIAL APPENDIX DEVOTED ENTIRELY TO THE COMMENTS ON THE DRAFT REPORT. YOU MUST REALIZE THAT CHANGES HAVE ALREADY BEEN MADE TO THAT DRAFT. SOME HAVE BEEN PRESENTED TONIGHT. WE NEED PUBLIC EXPRESSION OF PREFERENCE OF ANY OR ALL PLANS OR COMPONENTS THEREOF PRIOR TO 15 JULY 1973 TO MEET OUR FINAL PUBLICATION DATE OF 1 AUGUST 1973.

THE ADDRESSES APPEARING ON THIS SLIDE ARE IN YOUR HANDOUT.

THE PREVIOUS PUBLIC INVOLVEMENT INDICATES YOUR NON-ACCEPTANCE OF PLAN C AT ANY POINT IN TIME. WE HAVE REFLECTED THAT NON-ACCEPTANCE IN OUR DISCUSSION OF THE DECISION PROCESS AS WELL AS MANY OF THE CONCERNS YOU HAVE EXPRESSED. YOUR NON-ACCEPTANCE IS IN PART BASED UPON THESE CONCERNS AS SHOWN AGAIN ON THIS SLIDE.

SLIDE 24 OFF

SLIDE 25 ON

TO OBTAIN A FINAL EXPRESSION OF YOUR ACCEPTANCE OR REJECTION OF PLAN C OR ANY OTHER PLAN OR PART THEREOF, IT IS NECESSARY TO INDICATE THE SOLUTIONS WE PROPOSE TO ADDRESS YOUR CONCERNs.

IN DOING THIS THERE IS NO INTENT TO EXPRESS ADVOCACY FOR ANY PLAN BUT TO PRESENT TO YOU SOLUTIONS, THAT IF ACCEPTABLE TO YOU MUST BE INCORPORATED INTO PLAN C PRIOR TO ANY IMPLEMENTATION OF THAT PLAN.

SLIDE 25 OFF

SLIDE 26 ON

WITH RESPECT TO INSTITUTIONAL PROBLEMS WE HAVE DISCUSSED THE ALTERNATIVES RELATIVE TO LAND OWNERSHIP OF PURCHASE, LEASE, EASEMENT AND COOPERATIVE AGREEMENTS. WE HAVE CONCLUDED THAT PURCHASE IS THE LEAST DESIRABLE AND BUILT-UP AREAS SHOULD BE AVOIDED. THE NON-PURCHASE OF LAND WOULD SAVE LESS THAN 2% OF THE AVERAGE ANNUAL COST AND IS NOT A FACTOR IN THE SELECTION OF PLANS. THE PLANS CAN BE CONFIGURED TO BY-PASS THOSE WHO MAY REFUSE LEASE OR COOPERATIVE AGREEMENT. THIS WOULD COST MORE BUT THE COST IS UNKNOWN.

THE CONTROLLING AGENCY DIFFICULTY HAS NOT BEEN OVERCOME AND WE HAVE NO GOOD SOLUTION TO THIS PROBLEM. STATE CONTROL OR THE APPOINTMENT OF A SPECIAL AGENCY OUTSIDE THE THREE RIVERS WATERSHED SEEKS TO BE IN CONFLICT WITH THE OHIO HOME RULE POLICY AND THEREFORE UNACCEPTABLE.

TO YOU AND TO THE PEOPLE OF THE WATERSHED.

SLIDE 26 OFF

SLIDE 27 ON

THE HYDROLOGIC PROBLEM OF FLOODING OF STREAMS IS A REAL ONE. THE SYSTEM WILL FUNCTION AGAINST PREDICTABLE STORMS SINCE THE SYSTEM WOULD NOT BE IN USE DURING THE STORM OR IMMEDIATELY PRIOR TO THE STORM. HOWEVER, THE UNEXPECTED OR UNANNOUNCED STORM OCCURRING IN THE JUNE - JULY - AUGUST TIME FRAME MIGHT WELL PRESENT A MORE ACUTE FLOODING PROBLEM IN THE UPPER REACHES OR SMALL HEADWATER TRIBUTARIES. APPENDIX V, PART I OF OUR STUDY DISCUSSES THE PROBLEM AND INDICATES AND I QUOTE "ALTHOUGH FLOODS ARE LESS LIKELY TO OCCUR IN SUMMER AND FALL, THERE HAVE BEEN FLOODS DURING THESE SEASONS IN THE PAST IRRIGATION WOULD BE TERMINATED WHEN THE RAINFALL WAS FORECASTED OR WHEN IT OCCURRED. THERE WOULD BE A LAG TIME WHEN CONTINUED FLOW WOULD OCCUR FROM THE PREVIOUSLY IRRIGATED LAND. THIS FLOW MIGHT TEND TO AGGRAVATE ANY FLOODING BY INCREASING THE FLOOD PEAKS. . . ." IT GOES ON TO SAY THAT THE INCREASE WOULD BE LESS THAN 15%. THE PLANNING PHASE CANNOT TOTALLY ADDRESS THIS PROBLEM. OHIO STATE IS LOOKING AT THE PROBLEM IN GENERAL TERMS NOW. WE KNOW IT EXISTS. IT CAN BE ENGINEERED OUT BY THE JUDICIOUS PLACEMENT OF RETURN FLOWS TO THE RIVER BEDS SO AS TO ELIMINATE THE FLOOD PROBLEM OR CONSTRUCTION OF SMALL PONDS. THIS WOULD ADD COST. HOW MUCH COST WOULD HAVE TO BE DETERMINED IN THE DESIGN ANALYSIS.

STUDIES OF LAND TREATMENT AT PENN STATE UNIVERSITY INDICATED INDETECTABLE CHANGES IN GROUNDWATER QUALITY OVER A TWO-YEAR PERIOD. THE REPORT OF TEN YEARS EXPERIENCE AT THE SAME SITE IS EXPECTED TO BE PUBLISHED LATER THIS MONTH. IN A NATIONAL SURVEY, ONLY SIX OF THE 119 LAND TREATMENT SYSTEMS SURVEYED INDICATED ANY GROUNDWATER PROBLEMS, AND THE INSTALLATION OF DRAINTILES CORRECTED THOSE PROBLEMS. THIS FACTOR ALONE IS JUSTIFICATION FOR THE INSTALLATION OF DRAINTILE AS ENVISIONED IN PLANS B AND C.

SLIDE 27 OFF

SLIDE 28 ON

THE TERMINOLOGY "TRANSPORT OF EFFLUENT" HAS TO DO WITH YOUR NON-ACCEPTANCE OF THE CLEVELAND EFFLUENT REGARDLESS OF ITS DEGREE OR PRIOR TREATMENT. THIS IS A PERSONAL CONCERN AND CANNOT BE ENGINEERED. HOWEVER IF THIS CONCERN IS CAUSED BY THE THOUGHT OF TRANSPORT OF RAW SEWAGE TO BE TREATED BY AERATED LAGOONS, THIS CAN BE REMEDIED BY PROVIDING SECONDARY TREATMENT IN CLEVELAND PRIOR TO TRANSPORT. THIS MODIFICATION WILL ADD \$20 MILLION AVERAGE ANNUAL COST. SOME DISCUSSION OF THE TUNNEL ITSELF INDICATED CONCERN OVER THE ABILITY OF THE TUNNEL TO PROVIDE 100% RELIABILITY. IF THE TUNNEL DEVELOPED A LEAK, THE GROUND WATER PRESSURE WOULD BE GREATER THAN THE INTERNAL PRESSURE AND THE PIPELINE WOULD FILL WITH GROUND WATER IF THE LEAK WERE LARGE ENOUGH. THIS WOULD IN FACT CAUSE A DISRUPTION IN THE SYSTEM. A CAVE IN OF THE TRANSPORT SYSTEM WOULD HAVE THE SAME RESULT. THE WAY THE SYSTEM IS CURRENTLY CONFIGURED, THE WASTE WOULD THEN HAVE TO BE DISPOSED OF

BY DIRECT DISCHARGE INTO A WATERSHED. THE SAME RESULT WOULD OCCUR IF AN ADVANCED BIOLOGICAL OR PHYSICAL CHEMICAL PLANT WERE TO BREAK DOWN. THE MAGNITUDE HOWEVER IS GREATER SINCE THE TUNNEL AS DEFINED CARRIES THE WASTE EQUAL TO THE EIGHT TREATMENT PLANTS LOCATED IN THE CLEVELAND AREA IN PLANS A AND B.

THE ONLY SOLUTION TO A LARGE SINGLE LAGOON STORAGE AND IRRIGATION AREA IS ITS REPLACEMENT BY SMALLER MORE DISPERSED AREAS. WE NOT KNOW THE COST DIFFERENTIAL; HOWEVER, THE ADDED COST WOULD BE LIMITED TO THE TRANSPORT SYSTEM TO THE SITES SINCE ALL OTHER COSTS WOULD REMAIN CONSTANT IF THE APPLICATION RATE REMAINS CONSTANT.

AERATED LAGOONS WERE QUESTIONED AS TO THE ABILITY TO ELIMINATE ODOR AND THEIR ABILITY TO PRETREAT THE EFFLUENT TO A DESIRABLE LEVEL PRIOR TO APPLICATION ON THE SOIL. WITH REGARD TO ODOR WE CANNOT GUARANTEE 100% ELIMINATION BUT PROPER DESIGN, OPERATION AND MAINTENANCE SHOULD ELIMINATE THE PROBLEM. FOR FURTHER PROTECTION, ALL LAGOON AREAS CALL FOR NATURAL FORESTATION AS A BARRIER TO ODOR EMANATION THEREFROM. THE ABILITY FOR AERATED LAGOONS TO TREAT THE EFFLUENT TO AN ACCEPTABLE LEVEL PRIOR TO LAND APPLICATION IS DISCUSSED IN APPENDIX V, PART II WHICH STATES "AERATED LAGOONS ARE BASINS IN WHICH ACTIVE BIOLOGICAL MASS, OXYGEN, AND WASTEWATER ARE BROUGHT TOGETHER. THE RESULTING BIOLOGICAL SYSTEM IS A VARIATION OF THE ACTIVATED SLUDGE PROCESS. WASTEWATER ORGANICS, IN THE PRESENCE OF OXYGEN, ARE UTILIZED BY THE ACTIVE MASS. THEREFORE, THE BASIC BIOLOGICAL RELATIONSHIPS PERTINENT TO ACTIVATED SLUDGE APPLY TO AERATED LAGOONS." FURTHER, WE APPLY A CHLORINATION PROCESS TO KILL THE BACTERIA AFTER THE EFFLUENT LEAVES THE STORAGE BASIN AND PRIOR TO TRANSPORT OF THE EFFLUENT FOR LAND APPLICATION.

THE LAGOON SYSTEMS PROPOSED IN PLANS B AND C CONSIST OF THREE STAGES, AN AEROBIC LAGOON, A FACULTATIVE LAGOON, IN WHICH THE MAJORITY OF THE SUSPENDED SOLIDS AND BOD ARE REMOVED, AND THE STORAGE BASINS WHERE ADDITIONAL FINELY DIVIDED SUSPENDED SOLIDS AND MORE BOD ARE REMOVED. THE FINAL EFFLUENT FROM THIS SYSTEM IS COMPARABLE TO THE ACTIVATED SLUDGE SYSTEM.

HOWEVER, AERATED LAGOONS DO NOT HAVE TO BE USED. THE WASTE, AS STATED PREVIOUSLY CAN BE PRETREATED BY ACTIVATED SLUDGE PROCESS IN CLEVELAND PRIOR TO TRANSPORT THEREBY ELIMINATING THE NEED FOR THE LAGOONS. THE COST HAS ALREADY BEEN IDENTIFIED AS \$20 MILLION AVERAGE ANNUALLY.

SLIDE 28 OFF

SLIDE 29 ON

THE AGRICULTURAL CONCERNS ARE BEING ADDRESSED IN THE OHIO STATE UNIVERSITY STUDY WHICH WE FUNDED IN LIGHT OF YOUR CONCERN. SO WE DO CARE! THE HEAVY METAL CONTAMINATION PROBLEM WILL BE REDUCED DRASTICALLY IF NOT ELIMINATED BY THE REQUIREMENT OF INDUSTRY TO PRETREAT. WE LOOKED AT FIVE OPTIONS FOR INDUSTRIAL PRETREATMENT AS SHOWN HERE:

SLIDE 29 OFF

SLIDE 30 ON

I WANT TO DISCUSS THE TREATMENT OPTIONS FOR INDUSTRIAL WASTE SINCE THE DISCUSSION SATISFIES ME OF YOUR MAJOR CONCERN.

ON THE BASIS OF PERFORMANCE ALONE, TREATMENT OPTION 5 MUST BE ELIMINATED FROM FURTHER CONSIDERATION IN REFINED PLANS WHICH MEET

LEVEL II CRITERIA. SINCE NONE OF THE TECHNOLOGIES USED IN THIS STUDY HAVE THE INHERENT CAPABILITY TO EFFECTIVELY REDUCE DISSOLVE SOLIDS, PRETREATMENT AT THE INDUSTRY FOR THEIR REDUCTION IS REQUIRED. OPTION 5 EXCLUDED PROCESSES TO REDUCE DISSOLVE SOLIDS.

THE EVALUATION AND PUBLIC REVIEW REINFORCED THE UNCERTAINTY ASSOCIATED WITH UNRESTRICTED APPLICATION OF HEAVY METALS ON THE LAND? THE ABILITY OF THE SOILS TO ABSORB THOSE METALS IS RECOGNIZED; HOWEVER, THE IMPACTS OF THE ACCUMULATION IN CROPS AND THE CONSUMERS OF THOSE CROPS REMAINS UNCERTAIN. THEREFORE, OPTION 4 IS ELIMINATED FROM CONSIDERATION IN REFINED PLANS EMPLOYING THE LAND TREATMENT TECHNOLOGY. THIS MEANS THAT HEAVY METALS FROM INDUSTRY MUST BE REMOVED BY INDUSTRY PRIOR TO THEIR EFFLUENT ENTERING THE MUNICIPAL SYSTEM.

OPTION 2 IS TOTAL TREATMENT AND RECYCLE BY INDUSTRY. FOR DESIGN PURPOSES IT WAS EXCLUDED. IT DOES PROVIDE A SAVINGS TO INDUSTRY TO ACCEPT THIS ALTERNATIVE. ONLY OPTIONS 1 AND 3 REMAIN FOR INCORPORATION IN AREAWIDE WASTEWATER MANAGEMENT PLANS MEETING LEVEL I AND LEVEL II, RESPECTIVELY. THEREFORE, THE COMPONENT COST FOR INDUSTRIAL TREATMENT IS CONSTANT THROUGHOUT ALL PLANS MEETING THE SAME LEVEL CRITERIA; \$41 MILLION ANNUALLY FOR LEVEL I PLANS AND \$65 MILLION ANNUALLY FOR LEVEL II PLANS.

APPLICATION RATES HAS BEEN A POINT OF DEBATE THROUGHOUT THIS STUDY EFFORT. IT REMAINS A POINT OF DEBATE AND IS CLOSELY ASSOCIATED WITH THE FARM MANAGEMENT PROBLEM AND THE FLOODING PROBLEM. OUR CURRENT PLAN C CALLS FOR THE APPLICATION OF 75 INCHES PER YEAR AVERAGE OVER THE IRRIGATED AREA. AS SEEN ON THIS SLIDE 75" CALLS FOR A CHANGE IN FARMING PRACTICE. NOT SO MUCH FROM THE STANDPOINT OF LAND CAPACITY TO DRAW THE WATER-APPLIED BUT FROM THE CROP CAPACITY TO LIVE IN THE SATURATED SOIL AND TO ABSORB THE AMOUNTS OF NUTRIENTS APPLIED. THE LAND IF IT HOLDS ITS HYDRAULIC STRUCTURE WILL PASS THE WATER. IF WE REDUCE THE APPLICATION RATE TO 45" OR BELOW, IT APPEARS THAT THE CROP PATTERN IN EXISTENCE TODAY CAN BE RETAINED. OF THE OVER ONE HUNDRED DIFFERENT LAND TREATMENT SITES NOW IN EXISTENCE AND UNDER SURVEY, ALMOST ALL CROPS INCLUDING VEGETABLES HAVE BEEN PRODUCED. THE QUANTITY OF LAND REQUIRED AND COST OF THE FINAL SYSTEM WILL INCREASE WITH A DECREASE IN APPLICATION RATE. THE BROWN SHADED AREA ON TOP OF EACH BAR IS THE COST FOR THE LAND REQUIREMENT. IF YOU DON'T PURCHASE THE LAND THAT COST IS GONE. NOW, WITH RESPECT TO THE REMAINING COSTS, TO REDUCE APPLICATION FROM 75" TO 45" WOULD INCREASING ANNUAL AVERAGE COST BY \$9 MILLION OUT OF A TOTAL OF APPROXIMATELY \$280 M TOTAL AVERAGE ANNUAL FOR A SYSTEM APPLYING 45" AND FULLY CONSTRUCTED. THAT IS LESS THAN 5% ADDITIONAL COST BUT REQUIRES AS SHOWN ON THIS CHART

SLIDE 36 OFF

SLIDE 37 ON

ABOUT 1.6 TIMES AS MUCH LAND.

ANOTHER WAY TO DECREASE APPLICATION RATE BUT NOT INCREASE LAND REQUIREMENT IS TO REDUCE THE AMOUNT OF TOTAL EFFLUENT APPLIED TO THE LAND. IN OUR PLAN C, THIS WOULD REQUIRE THAT THE DIFFERENCE BE TREATED BY AB/PC PLANTS IN CLEVELAND AND WOULD INCREASE THE COSTS. YOU COULD ALSO APPLY ALL YEAR WHERE WE ONLY CONSIDER APPLICATION DURING THE GROWING SEASON. THIS ALTERNATIVE DOES REQUIRE CROP CHANGE TO A GRASS TYPE CROP IF WE CAN ACCEPT EXPERIENCE GAINED IN EXISTING FACILITIES IN OTHER REGIONS.

THE PROBLEM WITH PROVIDING DATA ON EXISTING SITES IS THAT GOOD MONITORING AND EVALUATION IS ALMOST NON-EXISTENT. THE PENN STATE EXPERIENCE REPRESENTS ONE OF THE MOST SCIENTIFIC APPROACHES TO COLLECTION AND ANALYSES OF DATA. I PROVIDED THE RAINFALL AND APPLICATION RATE BY YEAR TO MR. TOM MIZIK OF NEW LONDON ON 10 APRIL THIS YEAR. THERE ARE ONLY TWO YEARS OF DATA AVAILABLE. THE 10 YEAR REPORT IS DUE SOMETIME THIS YEAR. THE 1963 EXPERIENCE SHOWS A RAINFALL OF 30.3" AND APPLICATION OF AS MUCH AS 48". THE 1964 EXPERIENCE SHOWS A RAINFALL OF 30.8" AND APPLICATION OF AS MUCH AS 66". IT IS NOT SUFFICIENT HOWEVER TO DISCUSS JUST THE APPLICATION RATE WITH RESPECT TO QUANTITY OF WATER AND THE SOIL AND CROP CAPACITY TO WITHSTAND THIS WATER. WE MUST ALSO CONCERN OURSELVES, AND DO, WITH THE CAPACITY OF THE CROP TO ABSORB THE NUTRIENTS SUCH THAT BUILDUPS OF NUTRIENTS DOES NOT OCCUR IN SUCH QUANTITY AS TO POLLUTE THE SOIL ONE TIME. SO THE CROP PATTERN TO BE CROWN IS JUST AS CRUCIAL AS THE SOIL TYPE AND RAINFALL PATTERN. IN CONCLUSION, TO SATISFY THE PROBLEM OF APPLICATION RATE WE MUST ALSO SATISFY THE FARM MANAGEMENT CONCERN

TO INCLUDE HOW MUCH TIME IS AVAILABLE TO THE FARMER VERSUS HOW MUCH TIME IS AVAILABLE TO THE SANITARY ENGINEER AS WELL AS WHAT CROPS WILL BE ACCEPTABLE FOR GROWTH WITHIN THE AREA AND CAN BE PRODUCTIVELY MARKETED. OHIO STATE IS LOOKING AT THIS FACET OF THE STUDY. THE AMERICAN PUBLIC WORKS ASSOCIATION IS ALSO DOING RESEARCH. BOTH EFFORTS SHOULD BE AVAILABLE IN AUGUST. THEY WILL AND HAVE INFLUENCED OUR EFFORTS.

SLIDE 31 OFF

WE INVITE YOUR COMMENTS.

TO INCLUDE HOW MUCH TIME IS AVAILABLE TO THE FARMER VERSUS HOW MUCH TIME IS AVAILABLE TO THE SANITARY ENGINEER AS WELL AS WHAT CROPS WILL BE ACCEPTABLE FOR GROWTH WITHIN THE AREA AND CAN BE PRODUCTIVELY MARKETED. OHIO STATE IS LOOKING AT THIS FACET OF THE STUDY. THE AMERICAN PUBLIC WORKS ASSOCIATION IS ALSO DOING RESEARCH. BOTH EFFORTS SHOULD BE AVAILABLE IN AUGUST. THEY WILL AND HAVE INFLUENCED OUR EFFORTS.

SLIDE 31 OFF

WE INVITE YOUR COMMENTS.

I HAVE BEEN ASKED TO ANNOUNCE THAT
Congressman Latta who wanted to be
here tonight but could not make it
[REDACTED]

Congressman Latta was to be here tonight but could not make it. He asked me to announce the He, Congressman Latta as well as Congressman Guyer and Ashbrook are opposed to ^{any} plan to transport ~~and that~~ Clark's effluent to the North Central Ohio area.

Exhibit 2

I appreciate the opportunity to comment on the plan that will help clean up Lake Erie and the three rivers. It most certainly needs it.

There must be great care used in implementing a system used to do this. I am convinced "Plan C" is not in the best interest of the people in this area, or the people of the Cleveland area, or the people of the entire State.

In previous meetings conducted by the Corps, we were informed of sites where similar projects were in operation. I fail to see the similarity in irrigating a near desert location of Australia or Colorado to irrigating land, that through engineering and many generations of back breaking labor has been developed from land with many swamps and areas where agricultural production was impossible, into a high standard of productivity by stream cleaning and rerouting and the installation of thousands of miles of drainage tile. (*Compare chart back page*)

Let me quote from the Encyclopaedia Britannica, (Vol. 16—1967 edition) what is said about Ohio agriculture. "To the North lies the second most prosperous agricultural area. There, after vast swamps have been drained, the limestone soil was found to be highly productive." It seems to me if the farmers of the area thought they needed more water to increase production, they wouldn't be spending thousands of dollars to clean ditches and install drainage tiles to remove it.

I asked Gilbert Kagy, Crawford County U.S.D.A. Soil and Water Conservation Agent, how I would tile to farm in a year like this past year. His comment was, "put tile every fifteen feet and then there will still be times when it will be too wet." I then asked how I would farm if I got all the rain God blessed us with plus 50 inches Cleveland blessed us with. His answer was, "I have no idea."

There is certainly nothing more disappointing or discouraging than spending long hours and countless dollars plowing and working a field, investing in and applying the right fertilizers, herbicides and insecticides and planting it with great care to assure a uniform stand in the many varieties of soil most farmers encounter in travelling from one end of a field to the other, only to get your equipment put away just in time to have three-fourth to one and one-half inches of rain poured on the field that will drown out many spots and leave water standing on the field for several days. Now your plan involves adding two inches a week to this amount which would already be more than sufficient moisture for about two weeks. Of course, rain does not have the fertile nutrients that the effluents have, but what good is fertilizer if it is too wet for anything to grow. Our forefathers didn't fertilize the swamps to bring them into production, they drained them.

We have been told that there would not be any surface drainage allowed in the land treatment area, but to my knowledge they have not devised a way of draining thousands of acres of land without taking surface drainage first and then draining the rest with tile. I have to wonder what would be the cost of such a system, if in fact it would be possible to construct it.

The study states that the cost of "Plan C" includes the cost of buying all the land but does not mention the fact that they are about tripling the amount of water that will have to be carried back to the lake and the costs involved in reconstructing and maintaining the streams and rivers that would be expected to carry the additional flow.

Also the hope that the present land owners could maintain ownership of the land was made but no mention of who would reimburse the farmer to

change from the primarily grain farming that now exists, to strictly live-stock feeding; with extensive forage production that would replace it.

It has been mentioned that reed canary grass would be one of the best crops to be produced on the treated area because it will stand the conditions well, but why would anyone want to trade from production of alfalfa with approximately 20% protein and very good palatability, which with some care can be grown on most farms, to reed canary grass which, to quote a nutrient professor from O.S.U., has palatability comparable to sawdust.

In conclusion, let me say that we surely have to do a better job of waste water management if we are to survive. Plan A or Plan B are most certainly the best Plans for all concerned.

Deane Dick
R.R. # 3, Box 95
Shelby, Ohio 44875

SEWAGE STATISTICS

	<u>COLORADO</u>	<u>AUSTRALIA</u>	<u>OHIO</u>
Land use	Principal irrigated areas, coinciding with pastoral and dairying livestock ranching and open grazing	Wasteland desert 30% Nordic herding 15% Semidesert Open grazing 55%	Extensive grain farming, some livestock
Climatic regions	Continental Steppe warm summer, cold winter, little precipitation	Continuously hot Negligible precipitation 40% Continuously hot Little precipitation 30%	Continental moist Warm summers Cold winters Moderate precipitation all seasons Summer maximum
Population- 1960 census	Borders on sparsely populated--5 persons per sq. mile. 18.9	Sparsely populated 0-5 persons per sq. mile 3.5	Borders on densely populated--250 persons per sq. mile 248

Information researched from the Britannica World Atlas International.

Encyclopaedia Britannica, Inc.
William Benton, Publisher

1966 edition

CRAWFORD COUNTY FARM BUREAU PUBLIC AFFAIRS COMMITTEE

Exhibit 3

In our thinking, after studying the Three River Sewage Disposal study made by the U. S. Army Engineers, the biggest objection is the complete disregard for the feelings and well-being of the affected people in the area of the proposed lake or lagoon and the surrounding area.

The loss of the 96 families in the 1600 acre lake area and the consequent effect on the immediate community would be disastrous. The loss of \$80,000.00 in taxes and the shifting to other school districts of the children would put hardships on school districts in many ways, not to say anything about the effect on established businesses in the immediate community.

In these times of food shortages, this 1600 acres would be out of production for all time. It is very doubtful if there would be any increase in the overall useful production in the types of things we really need. In fact with the two inches of extra water a week we would get on top of the excessive rainfall we have had the last two years, rather than have increased production, we may not be able to raise anything at all. This would be a loss of 250,000 good productive acres and disaster for more than one million people.

We realize the sewage problem is a big one and must be solved, but it should be solved in the place it starts, in this case in the Three River Watershed Area and not 75 to 100 miles away. These people have their own problems to solve which they are not trying to push off on someone else. The study has several alternative plans which are in the Three River Watershed area. We strongly urge the adoption of one of these plans.

We don't think it would be legal to remove the water from the Three River Area Basin to an outlet 75 to 100 miles away. That would, among other things, raise the water level in that artery, even though it might return the water to Lake Erie and satisfy all international agreements.

With an untried scheme such as this a few questions arise.

1. What would be the effect on the underground water supply?
2. What would be the extra demand on the already short energy supply?
3. How long would it take for the soil to become totally unproductive? Maybe less than 50 years?
4. Where will this food be marketed that will not be fit for human consumption.

In this day and age of ability to solve problems, when we can go to the moon, this plan could become obsolete over night, after having disrupted the lives of a million people.

Here is the result of a little study I have made myself in the last six weeks. I think I have averaged about $1\frac{1}{2}$ inches of rainfall a week. My land is well tiled. If I would have had another 2 inches of water deposited on my land, I don't think I could have turned a wheel. I do not think this plan is based on farming reality.

Respectfully submitted,

Herbert Warner

Chairman of Public Affairs

Exhibit A 1.

~~Colon~~ Moore
Pader & Batterson

I am Frank Fenner
a member of the
Richland County Farm
Bureau board. I am
representing this
board which in turn
represents 820 members
of the Richland County
Farm Bureau Body.

2

After considerable study and discussion of the summary report of the "Draft Watershed Management Study for Cleveland Akron Metropolitan and Three Rivers Water Shed Area, we reject Plan C, of the four plans that were submitted

The following are the reasons for our rejection of Plan C.

Number 1.

3.

We feel the ^{200,000} acres
are needed in the area
for agriculture and for
the tax benefits
these acres produce
in the community.

Number 2.

We feel that there are
direct injustices to the
farm families involved
such as: giving up
their way of life and

great sacrifices they
will be called upon
to make on their
chattels and equipment.

Number 3.

Because ~~of the~~
additional water at
the rate of 2" or more
per week for 26 wks
per year would be
^{sent to} pumped over the
ground, in wet
years such as 197~~2~~^{and}
1973 (so far) it would
create more hardships.

If this were to

occur who would be liable for damages? Would the damages be paid? How would the amount be determined? By whom would it be determined?

After much deliberation we decided that Plan A11 and Plan B were the best choices of the four possibilities submitted.

We are definitely opposed to Plan C.

Exhibit 5

I thank you people for permitting me to add to your report on the proposed Cleveland-Akron Wastewater Management study. Over the past few years the people of this country have been made aware of the problems associated with the environment. While rural areas can not be divorced entirely from environmental problems, our mode of living, primarily population density, lends itself to fewer problems of the same magnitude as those covered in your report.

Having said that I would judge there are very few people who can not appreciate the task that city administrators have in providing services to their constituents.

It would seem to me that rural areas have made a tremendous sacrifice in giving up land for super highways, airports, etc. for the growth and vitality of metropolitan areas.

Plan "C" in your summary of waste-water management is so huge in its scope, so uncertain in its long range practicality, so disruptive to so many people in one area, that on moral grounds alone it should not be considered seriously. The environmental, economic, and social patterns of the proposed site outlined in plan "C" has evolved over many years. The price is too high, the sacrifice too great.

I hope you will give serious consideration to only those alternatives which treat the waste chemically and keep it within the three rivers basin.

Robert T. Jones Jr.
P.O. Box 7700, Akron
President
Seneca County Farmers
Bureau

Statement by
**Crawford Regional
Planning Commission**

COURT HOUSE, BUCYRUS, OHIO 44820

Exhibit T6

May 31, 1973

United States Corps of Engineers
Ohio Department of Natural Resources
Ohio Environmental Protection Agency

Dear Sirs:

This is to inform you that the Crawford Regional Planning Commission is on record in opposition to the Corps of Army Engineers proposal to dispose of liquid effluent from the Three Rivers Watershed Area on soils in Crawford, Seneca, and Huron County, Ohio.

This action is recorded in the minutes of the May 24 meeting and resulted from careful deliberation and consideration by members of the commission following a presentation by Col. Moore, who addressed the commission on January 25, 1973 in regard to this proposal.

Crawford Regional Planning Commission has as paid members, the cities of Galion, Bucyrus, Crestline; the villages of Chatfield, New Washington, North Robinson and Tiro and several Crawford County townships.

All political sub-divisions including county officials were involved in the vote for unanimous opposition.

Sincerely,

T. W. Thatcher
T. W. Thatcher, President

W. C. Kleman
W. C. Kleman, Secretary

WCK:mw

Exhibit 7

Frank V. Smith

I would like to express my appreciation for the opportunity to comment on the wastewater management study for the Clev.-Akron Metropolitan area. It is my understanding that there are 3 possible methods for treating wastewater to meet the desired standards; (1) land treatment, (2) physical-chemical, + biological. It is also my understanding that the two latter methods can be done in the three rivers basin without using vast acreage in North Central Ohio.

I appreciate + understand the problems associated with handling the tremendous volume of sewage generated by cities the size of Cleveland + Akron. All the other cities are going to have to meet the same desired standards as Cleveland + Akron. My question is: can every city go 100 miles or so to solve their wastewater problem as under Plan C of this study?

Exhibit 8

FARM CHEMICAL CENTER

Route 224 East

Phone 426-0074x

did not read ATTICA, OHIO 44807

8554

June 6, 1973

Thank you very much for the opportunity to express my concerns regarding the Cleveland-Akron Wastewater study. Since my property would be in the area proposed for land treatment, I am, needless to say, quite concerned over the possibility of selecting this type solution to the problem. I appreciate the need for steps to be taken to improve the quality of our lakes and streams. I do, however, believe we should move with sufficient caution to avoid creating one problem in order to solve another.

In all the meeting I have attended no one has been able to answer questions regarding the movement of metals in the soil. We have heard people elaborate on the benefits of wastewater as a soil fertilizer, yet very little attention has been given to the effect of putting an additional 60" of water on our land. We have heard individuals continually predict increases in yield, but seem to pay little attention to the fact that cropping patterns would have to be changed greatly to be compatible with the increase in the amount of water applied.

It is my understanding some of the alternative land treatment proposals would take out of production or drastically alter the type of agriculture on well over 225 thousand acres or an area equal to one half the acreage in a county the size of Seneca.

Presently, we are witnessing the effects of short supply in the red meat industry. I am not implying that we are going to

FARM CHEMICAL CENTER

Route 224 East

Phone 426-4174

8554

ATTICA, OHIO 44807

need every acre of land alternatives, it would appear to be using our resources to a better advantage by treating the wastewater chemically and returning it to the stream and Lake Erie. Initiating the land treatment approach and then moving to a chemical approach in the years ahead would not be as simple as merely shutting the water off, since there would be a tremendous investment involved.

I hope those involved will seriously consider the serious long-range implication to land treatment and consider the in basin treatment.

As we are in the fertilizer and farming business, we think our business will be hurt if this goes in, and also costly to have ponds in our area. Our fertilizer sales for the past 5¹ years are as follows:

1968 - \$ 82,797.66
1969 - \$101,822.11
1970 - \$117,193.33
1971 - \$156,442.24
1972 - \$161,360.32
1973 - \$117,807.15 (January 1, thru May 31, 1973)

Will we be compensated each year for our losses in this business and farming with Soybeans at \$12.00 a bushel and Corn at \$2.60 a bushel?

FARM CHEMICAL CENTER

*Eldon Weaver
Helen Weaver*

Eldon Weaver, Owner
Helen Weaver, Secretary

Exhibit 9

Thank you for the opportunity to react to the study made by the Corps of Army Engineers regarding the various Wastewater Plans proposed for the three rivers watershed areas.

In the meetings and information I have received regarding this study, it appears to me that there are many questions remaining to be answered.

- (1) Can the products from this irrigated land be sold on the open market?
- (2) How can ~~THE FARMER~~ bear the cost If the crops are to be fed through livestock, as we have been led to believe, how can the farmer bear the ~~THE~~ cost of building a large livestock feeding operation to feed the products of his farm and to take care of the waste disposal from this feeding operation?

Therefore, I strongly urge you to select one of the alternatives that would not necessitate taking thousands of North Central Ohio Land.

*Harold M. Beat
Rt. 2
Atica Ohio*

Testimony given on Three Rivers
Watershed Engineering Study.
Willard, Ohio - June 6, 1973

My name and address is Luther C. Gibbs, 2912 CR 265, Fremont,
Ohio.

First let me say that I consider it a privilege to give
testimony at this hearing. As I understand this study, there are
several possible ways to treat the problem. My testimony only
applies to the Land Use Plan at Willard, Ohio.

I question if it is legal or morally right to divert water
from one watershed to another, in other words from the Three Rivers
area to the Huron, Vermilion and Sandusky Rivers.

For many years the Corps of Engineers has been working on a
project to stop the flooding of the Sandusky River in the Fremont
City area. This I believe has been accomplished by construction
of dikes in the area.

If more water is added to the Sandusky River, will this change
the engineering study date that was used to determine the height of
these flood walls? In fact, will possible additional water from the
Willard area cause more frequent or additional flooding in the
Sandusky River Watershed?

My farm is approximately one and a half mile south of the
mouth of Sandusky River where it enters into Sandusky Bay. I have
had considerable flooding this year, because of the northeast winds
backing up water from Lake Erie into the streams and ditches that
flow into the Sandusky River. In fact the normal flow of the
Sandusky river and streams have no place to go because of the high

Lake level. This causes the water to spread out and flood the area. Would additional water from the Willard area compound this problem? I have already spent more than One Thousand Dollars this year and expect to do more work as soon as weather and water level permits.

Then there is the community of Whiteman Grove, which has a population of about one hundred and fifty persons in the summer. It is located on east bank approximately one and a half mile from the mouth of the Sandusky River. At present these people are wading through water to get into their homes and cottages every time the east wind pushes the Lake water into the Sandusky Bay and then into the Sandusky River, these people are literally flooded out. If the Sandusky River is to carry part of the water from the Three Rivers Watershed district, what will be the effect on these people, the people in the city of Fremont and all the adjoining farm land that maybe subject to additional flooding.

It seems reasonable for me to assume that any area that is adjacent to the river and is now subject to flooding under present waterflows, will flood more frequently and create a higher water level, if the Willard area is used.

Will the people in the Cleveland and Akron areas be liable for damage to the homes, businesses and farm lands in the effected area?

As you can see, it is my belief that it would be much better for myself and all the people in the north end of the Sandusky River Watershed if one of the other plans could be used, thereby leaving the Willard area undisturbed.

Thank you.

Exhibit 11

The New Washington Equity Company

DEALERS IN

GRAIN - SEED - COAL - FEED

New Washington, Ohio

Phone 492-2548

We the Board of Directors and Manager of the New Washington Equity Company wish to express our objections to the proposal by District Engineers, U. S. Army Engineer District, Buffalo, New York, known as Three Rivers Watershed area for Cleveland-Akron Metropolitan Wastewater.

No. 1 - Our area is in the center of one of the highest grain and livestock production areas of the state. It brings in an income of over \$86.00 per acre.

No. 2 - This project would destroy at least 96 farm operations thus driving from their homes 96 families, making it necessary for them to leave the area and hunt for and obtain land elsewhere. These families have owned their land for generations, have made their living, paid taxes and made the necessary improvements over the years to bring their land into the highest production possible. They have asked no one to help support them. Their children have been educated in the area in both private and public schools. The private schools will be destroyed and the public school here ~~New Wash.~~ ~~area will be seriously hurt.~~ The chain of reaction from this will, ... to ... , ... other communities where the increase of population will cause more school problems, considering the fact that schools everywhere are bulging their walls.

No. 3 - This community is dependent upon these farmers. This is strictly an agricultural community. Our business, the banking business and grocery business will be affected as well as other business in the area. It would seem to us that to come into a prosperous community, destroy the livelihood of many hundreds of people and spend many millions of dollars doing it, this is not the way to obtain the relief for another area.

No. 4 - In this list of objections, so far only the amount of land directly destroyed is being cited, 16,000 to 17,000 acre . Now we would like to discuss the many, many thousands of acres of land that would be affected by placing the many additional inches of water upon it and the uncertain results on the grains and foods being raised and used for human consumption. You should take into consideration that all grains raised on farmland find their way into human foods, in one way or another. In this area we raise wheat, corn, soy beans and oats. It is easily proven that these grains are all used for human consumption some way. No assurance has been given us so far, that using the effluent on our land, will not destroy the sale of the grain.

No. 5 - This whole program affecting the destroyed areas, not including the acres where the products raised would be questionable, would be a loss to our community of approximately \$1,000,000.00 per year, plus

the loss of property taxes of at least \$80,000.00 per year. The amount of income taxes would be very high. The loss of property taxes would cripple our schools, which at present are having enough trouble obtaining money to operate.

We dedicate ourselves to using every means at our disposal, to stop the unreasonable dream of some people who would wish to perpetuate themselves ~~on~~ their names.

OR

Sincerely,

Louis A. Karl Pres.

William Thompson
M. M. & T. Co.

Richard Marquart Secy.

Robert Harris

Harold Heydinger Vice Pres.

George W. Estall

Lester J. Lt

Kenneth W. Edwards

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DEPARTMENT OF THE ARMY
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

PUBLIC MEETING
ON THE
WASTE MANAGEMENT STUDY
FOR THE
CLEVELAND-AKRON METROPOLITAN
and
THREE RIVERS WATERSHED AREAS
Held in Holiday Inn
Ohio Turnpike, Exit 11
between
Akron and Cleveland, Ohio
on
7 June 73
at
7:30 p.m.
COLONEL ROBERT L. MOORE, Presiding

1
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DEPARTMENT OF THE ARMY
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

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Ohio Turnpike, Exit 11
between
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7 June 73
at
7:30 p.m.

PRESENT:

- COLONEL ROBERT L. MOORE, District Engineer, U.S. Army
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- 4 CASTERLINE, LEROY C., 2010 Hinckley Hills Dr, Hinckley, Ohio,
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- 8 CHAPMAN, DEAN E., 65 S. High St., Akron, Ohio, Manager,
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- 10 COLEMAN, WILLIAM R., Mayor, City of Cuyahoga Falls, 2310
11 2nd Street, Cuyahoga Falls, Ohio
- 12 CONKLIN, RICHARD, Route 3, Wellington, Ohio, Organization
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- 28 ELZAM, DR. O. E., Professor of Biology, Case Western Reserve
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- 30 EMMETT, DANIEL, Former Teacher, Richfield, Ohio
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6 Sanitary Engr.
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BOHLIK, HAROLD E., 1960 Substation Rd., Brunswick, Ohio
44212, Resident Engr., Chief, Turbodive Branch, NASA,
Brunswick, Ohio

ROSS, CURTIS, 21929 Lorain Road, U.S. EPA, Ohio District
Officer, Fairview Park, Ohio

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- 10 THOMAS, MYRON, 6801 Garrett Rd., Sierra Club
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- 16 WINEBRENNER, 1584 Hagey Dr., Barberton, Ohio, Owner,
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- 17 ZEIGER, SUSAN, 22 N.W. Avenue, Tallmadge, Ohio, Student

PROCEEDINGS

Spz 3 COLONEL MOORE:

4 Ladies and gentlemen, I am going to just make a
5 few administrative announcements while some of the people
6 are still proceeding through the line, if I may.

7 First, this is a final public hearing on the
8 Three Rivers Water Quality or Waste Water Management Study
9 and, as you know, this is a planning effort by the Corps,
10 and it is not an exercise similar to normal Corps projects
11 where we go through a planning phase, a study phase, and a
12 construction phase. We are only taking this one through
13 the planning phase, that is, the planning for the State of
14 Ohio and are turning the final product of review by the
15 Corps over to the state for whatever desires they have for
16 the planning exercise.

17 As you know if you have attended previous public
18 hearings, our planning efforts started where they left off
19 with the northeast Ohio plan and updated that in accordance
20 with several documents.

21 Since this is a final public meeting, I will
22 follow the normal agenda the Corps follows in a final
23 public hearing. I will make a statement. I would like to
24 make a little bit longer statement than I normally do,

1
2 because I want to go back and recapture the 12 alternatives
3 and show you what we did with them, as well as define the
4 four final plans which we retained with the State's con-
5 currence, and then draw some conclusions for you on those
6 final four plans, and I believe the State wants to make a
7 statement thereafter.

8 This is a co-chaired meeting, it is co-chaired
9 with the State of Ohio, and for that I am very much apprecia-
10 tive. We have in this study, as best we could, acted as
11 their planners under their general guidance.

12 We have with us from the State Mr. Jim Schafer,
13 the deputy to Mr. Bill Nye from the Department of Natural
14 Resources. Mr. Schafer is sitting just to my immediate left.

15 We have Mr. Chick Steiner from the Ohio EPA,
16 and he is sitting just to Jim's immediate left, and they
17 together represent the two agencies in the State of Ohio
18 governmental bodies that we have dealt with during this
19 whole study. The State has made two at the two previous
20 final public meetings of this cycle. This is the third
21 and there is a fourth in Cadiz tomorrow, and that will
22 terminate this study as far as public meetings and public
23 involvement are concerned, as far as the Corps is con-
cerned.

Now, how much public involvement, et cetera, there will be with the State as they proceed on will be a State concern. The Corps does leave the study once it turns it over to the State, and their final report is, in fact, due August the 1st.

It is a pleasure to return to this area to present in final summary the study and the findings and the conclusions, and the State will, in fact, make the recommendations on the study, the Corps will not.

During our previous public meetings we have detailed for you the several steps we followed in the development of the study. They are shown on this chart for review. We at that time were completed with the first three and, by the way, I apologize for the lantern. I tried to move it earlier this afternoon but they just wouldn't let me.

We did complete the first three and had accomplished some work on the others. We are now getting the study with only three factors remaining prior to our submission of the study up for review. These three factors are shown on this chart and I think they are very critical.

The final public involvement from these meetings we have had for the past two days must be assessed.

1
2 And the draft report which you have available to you in
3 libraries throughout the area or was mailed to you if you
4 are on our mailing list must be updated to reflect these
5 public concerns expressed or public feelings expressed in
6 these final public hearings.

7 The State of Ohio, or Ohio State University, is
8 currently examining the agricultural aspects of the study
9 for us, and that is the Corps of Engineers funded, agreed
10 to by the State, and we feel a very necessary element in
11 agreeing to the study. They are more familiar with the
12 agricultural aspects in the area than our contractors
13 were, and we feel that they are highly qualified for the
14 review of that aspect of the study.

15 The State of Ohio must have the previous two inputs
16 prior to making their final recommendations in accepting
17 the planning effort. And although they may want continuing
18 recommendations at this point in time, I am sure these
19 are subject to changes depending upon the first two inputs.

20 I would like to review the process of reduction
21 of the 12 alternatives to provide a base between me and
22 you on what has transpired up to the final four plans.

23 Plan 1, if you will recall, was the Northeast Ohio
24 Plan upgraded to the Level 1 treatment criteria.

2 Plan 3 is the Northeast Ohio Plan updated to Level 2
3 criteria, which is the Corps of Engineers' interpretation
4 of the -- is the 1965 goals identified in the Water Pollution
5 Act amendments of 1972.

6 Plans 10 and 11 just looked at the cost difference
7 between advanced biological and physical chemical. Since
8 the cost differences were minimal, the decision between the
9 two technologies becomes a case of plant-by-plant decision.
10 Therefore, Plans 10 and 11 were discarded.

11 With respect to Plans 1 and 3, the only difference
12 is the level of treatment and some minor changes in the
13 plant locations, trying to see if we could optimize
14 again on the Northeast Ohio configuration.

15 The State of Ohio desired the retention of Plan 1
16 and the updating of that plan to Level 2 criteria. There-
17 fore, Plan 3 was discarded.

18 I should take one minute to show the comparison
19 of the levels of treatment again for you. We showed
20 them during the previous public hearing.

21 The Level 1 Ohio effluent standard, and that's
22 kind of a misnomer because at that point in time they were
23 developed from a Mahoning River study and they really
24 aren't published as Ohio effluent standards, but we used

them as the Level 1 standard, and Level 2, the 1985 goal specified in the Public Law No. 92-500, and as defined by the Corps.

We retained Plan 1 which we will call Plan A for development with that developed to Level 1 and specified as Plan A₁ and to Level 2 specified as Plan A₂.

We also looked at totally land technology schemes. Plans 2 and 4 to Levels 1 and 2, respectively, utilize this technology by developing treatment sites in north central Ohio, and sufficient land was not available in the basin, so we had to look outside the basin, and that's what these two plans did.

Plan 12 was also developed to place more of the land treatment in the basin by variation of the land technology. They treated Akron in Basin 1 and only took Cleveland to the outside.

None of these total land schemes were considered acceptable because of the decrease in flows created in the middle and/or the lower Cuyahoga by the transport of the water out of that basin and, therefore, they were all discarded.

We then looked at combining technology Plans 5 and 7, at Levels 1 and 2, respectively, and kept all the treatment

1 within the Three Rivers Watershed.

2 The upper, less densely populated areas were, in
3 fact, accomplished with land treatment, with the remainder
4 then by advances in biological, physical-chemical. Since
5 it was all in a basin and there was an obvious advantage
6 to that, we retained that plan for one of the final four.

7 Now, since total land technology seemed to be
8 cheaper of all the technologies and provide for the maximum
9 recycling of the by-products of the treatment system, we
10 developed Plans 6 and 8 as maximum land technology alterna-
11 tives acceptable from the standpoint of providing sufficient
12 flows in the lower Cuyahoga and the middle Cuyahoga.

13 This plan is retained for further study to complete a set
14 of plans to provide maximum flexibility in the decision
15 process for the State in the future. And this is the fourth
16 and final plan retained. We did look at another plan,
17 Plan 9. I just looked at further reduction in the number
18 of plants to see if that was in fact cost-effective of
19 further reduction in number of plants, but it proved not
20 to be and was discarded.

21 I would like now to discuss the final four plans,
22 our evaluation of these plans in consideration of engineering,
23 cost, environmental, social and institutional, as well as

2 public acceptance.

3 You must realize this is a preliminary report
4 and the findings are subject to change, as I have stated
5 before.

6 Copies of the draft report are available to you
7 and the entire report is available in the libraries
8 throughout the area. The entire report is about that thick
9 (indicating approximately eight inches).. You can look
10 at one or all of the volumes and they are available.

11 The final four plans are developed fully to conform
12 to the items shown in this chart and they are the desires
13 of the State of Ohio with respect to stream quality and
14 compatibility with ongoing efforts keyed to the Northeast
15 Ohio Plan.

16 Secondly, the goals established by the Water
17 Pollution Control Act amendments of 1972.

18 Third, the 1972 Water Quality Agreement between
19 Canada and the United States.

20 Four, guidance from the Office, Chief of Engineers.
21 And I mention that one only because I would like to quote
22 from that guidance which stated: The most important
23 guidance from the Office, Chief of Engineers, is the objec-
24 tive to assure that all alternative systems must be

evaluated in terms of economics, social effects, environmental impact, and institutional impact. And this, ladies and gentlemen, we have done.

Prior to the development of the specific details of the four plans, I ought to go into the options of the four plans, and the first option was a look at industrial waste treatment.

We had five options in this regard and we had two specific general categories we had to look at, as far as industrial waste water was concerned.

First, those discharges directly into a waterway and

Second, those discharged into a municipal sewer system for treatment.

The discharges directly are no problem since industry will be required to treat those either at the Level 1 or Level 2, whatever the criteria is desired, and they will have to pick up the tab.

Those discharged into a municipal system must be pretreated by industry to a level compatible with the capability of the municipal system to treat the effluent to final treatment criteria. In that regard there are five options.

On the basis of performance alone, treatment Option 5 must be eliminated from further consideration in refined plans which meet Level 2 criteria. Since none of the technologies used in this study have the inherent capability to effectively reduce dissolved solids, pretreatment at the industry for their reduction is required. And Option 5 excludes that kind of process from its makeup.

The evaluation and public review reinforced the uncertainty associated with unrestricted application of heavy metals on the land. The ability of the soils to absorb those metals is recognized. However, the impacts of the accumulation in crops and the consumers of those crops remains uncertain. Therefore, Option 4 is eliminated from consideration in refined plans employing the land technology option.

Option 2 is total treatment and recycle by industry, and for design purposes, we exclude that option. That option is, however, a cost effective option for industry and if they desire to pick that option up, it is there available for them.

I might add, in addition to the cost relationship shown on this chart, industry would pick up another cost benefit in the fact that they would reduce the amount of

1
2 effluent that they throw into the municipal system
3 and thereby reduce the amount of cost the things that they
4 pick up in that municipal system, they pick up the percentage
5 of flow that they create and place into that system in
6 the same percentage of dollars.

7 Only Options 1 and 3 remain for incorporation
8 in areawide waste water management plans meeting Level 1
9 and Level 2, respectively. Therefore, the component
10 cost for industrial treatment is constant throughout all
11 plans meeting the same level criteria: \$41 million annually
12 for Level 1 plans and \$65 million annually for Level 2
13 plans. That's a lot of money.

14 Now, we have two problems to solve with respect
15 to the storm water, and the first one is how much to
16 collect and the second one is what management option for
17 treatment.

18 With respect to volume, the proportion of the
19 average annual urban storm water runoff that should be
20 collected for treatment was determined by examining the
21 relationships among the percentage of runoff collected and
22 the cost and effectiveness of the treatment system.

23 The combined information displayed here, and
24 that's an engineering nightmare, led to trying to develop

systems having the capacity to collect and treat over the years 97.3 per cent of the average annual urban storm runoff. The only thing this chart will tell you, if you examine it very closely, and it is in the handouts, in the study, is that if you treat any more than that you gain very little in effective treatment, and you gain very little in added percentage of water treated and, in fact, you increase cost by a minimal of 30 per cent.

So, therefore, we chose that piece of the elbow of the curve and took off on the 97.3 per cent as the most optimum condition for storm water treatment.

With respect to the urban storm treatment options, they included three:

Local collection and treatment followed by direct discharge to the stream;

Collection and storage followed by treatment in a municipal facility during periods of reduced municipal waste water flow;

And, last, local collection, storage, and direct land treatment.

Now, the evaluation and public review provided no clear-cut advantage to any of these options, since all options collect the same volumes of urban storm runoff

1
2 and, therefore, in the refined plans, combinations of
3 storm water treatment options are incorporated to match
4 the appropriate technologies and plan configurations,
5 and to optimize the cost.

6 From an environmental point of view, the applica-
7 tion of sludge to barren strip mined land for restoration
8 and revegetation was established as the favored option
9 for sludge treatment management. This option provides
10 for recycling organics and nutrients extracted from waste
11 water to restore land areas otherwise left barren, some
12 of which provide acid mine drainage that pollutes other
13 waterways.

14 Second priority was given to the application of
15 sludge to local agricultural lands because of the recycle
16 of the organics and nutrients for soil enrichment. Incinera-
17 tion was reserved as the last choice option to be avoided
18 where possible.

19 The cost comparisons of the three options demon-
20 strated the same relationships. Incineration is the most
21 expensive option, the cost per ton being approximately 1.6
22 times that of the other two options. Agricultural land
23 application and strip mine land application are similar
24 in cost, with local agricultural land application having a

2 slight economic advantage. In those alternatives employing
3 aerated lagoons in north central Ohio, agricultural land
4 application is given the economic advantage, because of
5 the long distance from that area to the strip mined lands
6 in southeastern Ohio.

7 The response of the public, particularly in
8 Harrison County, has generally been enthusiastically in
9 support of the strip mine revegetation and restoration
10 option. Some local groups there have already begun to
11 pursue an early beginning of the transport of sludge to
12 the county for application to strip mine land, and to
13 agricultural land, I might add.

4 The only institutional problem regarding sludge
5 management options relates to the transport of sludge.
6 Water from the Lake Erie basin has to be taken out of that
7 basin and transported to another watershed, and that is
8 against the international joint agreement between the
9 United States and Canada. So permission will have to be
10 obtained from the International Joint Commission regulating
11 that agreement, and we have informally done that and
12 there seems to be no problem in obtaining the agreement to
13 take the water out of the watershed for that purpose.

21 The decision time for sludge management for

1
2 Cleveland is now since that city proposes to expend consider-
3 able funds on upgrading its incineration facilities at
4 Southerly. The city has indicated an interest in the
5 strip mine option. All plans currently utilize incinera-
6 tion until 1990. This can be changed to reflect the
7 immediate use of strip mine application depending on the
8 state's recommendation and will decrease total costs.

9 Now, with respect to the final Corps plan, Plan A
10 to Level 1, duplicates the geographical layout of treatment
11 facilities in the Three Rivers Watershed portion of the
12 Northeast Ohio Water Development Plan for Water Quality
13 Control. The Plan is regional, with a total of 26 proposed
14 municipal plants, eight of which are now in existence.
15 Municipal sewage is given biological treatment in all plants
16 except Cleveland Westerly, Rocky River, and New Kent,
17 where physical-chemical treatment is utilized. They are
18 shown here as triangles on the right if you can see those.

19 New Kent was originally proposed as advanced
20 biological. The construction is phased to meet current
21 appropriate State of Ohio standards and Level 1 criteria
22 for 1973 and 1983 as required by Public Law 92-500. After
23 1983 Plan A to Level 1 maintains that water quality and
24 merely enlarges facilities to accommodate increased flows.

1
2 Plan A to Level 2 is the same geographical layout
3 of Plan A to Level 1. The construction of this plan as
4 well as Plans B and C is phased to meet appropriate
5 State of Ohio standards, and Level 1 and 2 criteria for
6 1977, 1983, and 1985 as required by Public Law 92-500
7 which is the Clean Water Act amendments.

8 Plan B combines the technologies of advanced
9 biological, physical-chemical, and land treatment to
10 achieve Level 2 criteria. A significant aspect of this
11 plan is that, as in both levels of Plan A, all features
12 are within the Three Rivers Watershed area.

13 Plan B is similar to Plan A to Level 1 in that
14 nine large municipal plants are common to both plans.
15 These include Cleveland Southerly, Akron, New Kent, and
16 six plants located on or near the Lake Erie shoreline.

17 As in Plan A₂, Cleveland Westerly, Rocky River,
18 and New Kent are physical-chemical plants: The remainder
19 are advanced biological plants. All other waste water
20 treatment facilities located in the upper reaches of the
21 Three Rivers are aerated lagoon land treatment facilities.
22 The plan study showed that, when considering land treat-
23 ment, it was more cost effective to utilize aerated
24 lagoons for secondary treatment than to expand the existing

1
2 activated sludge plants for secondary treatment. The
3 option is still open to local communities, however, to use
4 their secondary treatment plants to the end of their useful
5 life and move to aerated lagoons only as expansions and
6 plant wear-outs require. There is also the option to
7 expand existing activated sludge plants for secondary treat-
8 ment and use land application only for advanced treatment.
9 However, a decision to retain activated sludge secondary
10 treatment will add to the cost of the plan.

11 In Plan B, plant site selection was based upon
12 the objective of providing land treatment where appropriate
13 sites existed in reasonable proximity to the smaller plant
14 locations within the Three Rivers Watershed area. The
15 larger advanced biological treatment plants could be sited
16 in a manner identical to that in the Northeast Ohio Water
17 Development Plan.

18 Plan C provides for the transport of waste water
19 generated within the Three Rivers Watershed area to a suit-
20 able land treatment area in north central Ohio, as well as
21 providing treatment within the Three Rivers Watershed.

22 Ultimately, 81 per cent of the municipal-industrial
23 and 74 per cent of the urban storm water runoff would be
24 treated by the land treatment technology, with 69 per cent

1 of the municipal-industrial waste water and 55 per cent
2 of the storm water runoff being transported to a single
3 land treatment site in north central Ohio.

5 A transmission tunnel conveys wastewater and storm
6 water runoff from the Cleveland metropolitan area to
7 the north central Ohio agricultural area. The 183 square
8 mile western land treatment site lies in portions of
9 Huron, Seneca, Crawford, and Richland Counties as shown.

10 The Akron plant is the only advanced biological
11 treatment plant. It discharges purified water directly to
12 the Cuyahoga River. This treatment plant will be expanded
13 and modified to treat sewage to a level permitting body
14 contact sports in the Cuyahoga basin. The discharge from
15 Akron will increase the flow of the Cuyahoga River during
16 low flow periods.

17 Streamflow will also be augmented by the upstream
18 land treatment facilities that secondarily treat and store
19 wastewater over the winter and apply the treated wastewater
20 to the land during the summer when natural flows are at
21 their lowest level and when municipal withdrawals create
22 the most impact.

23 Although Plan C represents a significant departure
24 from traditional wastewater treatment practices, its phasing

1 is programmed to recognize the current local planning
2 and early planning of the Northeast Ohio Water Development
3 Plan. The evolution from the current treatment plant
4 system to the ultimate Plan C configuration will not be
5 culminated until the year 2000. As now envisioned, no
6 land application of wastewater is necessary prior to 1983.
7

8 The decision as to whether the north central Ohio
9 land treatment area is chosen can be postponed until 1980.
10 In this manner, full advantage can be taken of the accumulat-
11 ing scientific data from various research and demonstration
12 projects throughout the nation. And that's darned impor-
13 tant, not only for Plan C out of basin but for Plan C in-
14 base.

15 Plan C is currently configured to provide a least
16 cost alternative for comparison with other technologies.
17 Plan C cannot be implemented as configured, but should be
18 reconfigured in light of the concerns of the citizens of
19 north central Ohio if it is ever to be acceptable.

20 To facilitate public evaluation of the alternatives,
21 impact tables and preference tables have been provided as
22 well as conclusions of this study you have in your handouts,
23 and I will not take the time at this point in time to
24 discuss them, if you can read them, and they are very

I
I

1
2 difficult to read, not only because of the print but
3 because you have to get used to what the format is and how
4 you go about the comparisons. But if you have seen them
5 before and have question on them, I will be more than
6 happy to answer them. If not and you have questions later,
7 if you will write those questions, I would be most happy
8 to answer them that way.

9 I would like to discuss the cost, the alternate
10 plans, acceptance to date, and conclusions.

11 The costs of the plans as configured are shown
12 on this chart. Note that Plans A₁ and A₂ are the same cost
13 until after 1980. This indicates that Plan A₂ logically
14 grows out of Plan A₁ by further addition of treatment
15 processes on existing plants. Therefore, a decision to go
16 to Plan A to Level 2 need not be made until 1980. The
17 growth in annual average costs from current plants to the
18 final alternative is demonstrated as is the cost differ-
19 ence between Level 1 and Level 2 treatment, and you can
20 see that by taking the last cost on the chart between
21 Alternative A₁ and A₂, it is an enormous cost to go to
22 Level 1, from Level 1 to Level 2, and when that's necessary
23 to achieve the water quality in the center is unknown at
24 this point. If we would have had our way and could have

had enough funds, we would have modeled the rivers and seen what different qualities of water water effluent to the streams would do to the stream quality.

We did not have those funds and that will have to be monitored in the future because it is most important as to whether you stop at Level 1 or go to Level 2. And there is, as I say, a big cost associated therewith.

Now, total decision flexibility is inherent in this planning study. That flexibility is demonstrated by this chart. I would like to take each of the decision points and discuss them separately.

First, a decision to go to Plan A, Level 1, Plan B, or Plan C, must be made in 1975.

If Plan C is the choice, the decision is final. The cost of going to Plan C in 1975 versus the Plan C as currently configured on an average annual basis is \$16 million per year for 50 years.

There are no major public concerns thus far expressed with the acceptability of Plan B or A₁. Since those plans call for all treatment in-basin. There are no major institutional problems. An agency such as the Three Rivers Watershed District could be given the necessary authority and responsibility to either monitor the

1
2 compliance with an over-all plan with execution by local
3 governments or be given total responsibility for execution.

4 Plan C from a public acceptance point of view
5 is totally unacceptable. The citizens of North Central Ohio
6 will not accept Plan C. For that matter, they will not
7 accept the transport of the effluent from any outside basin
8 into their basin for treatment. They do not reject land
9 treatment as a technology alternative to treating their
10 own waste water within their own basin.

11 We have addressed each of these concerns that the
12 North Central Ohio public had. We have Plan C. We
13 have discussed these in detail with them last night,
14 and the plan is still unacceptable even if it is redesigned
15 to meet other concerns.

16 Now, if Plan B were chosen in 1975, the decision
17 to retain Plan B or accept Plan C could be made in 1980.

18 Plan A₁ or A₂ will have been foregone, and again
19 Plan C even in 1980 at this point in time is not acceptable
20 to the public of North Central Ohio.

21 If Plan A₁ were the choice in 1975, any alternative
22 to include Plan A₁ itself can be the final decision in
23 1980.

24 This could include a modification to accept Plan B₁

1
2 with the advanced biological, physical-chemical treatment
3 to Level 1 only.

4 The reason I say that is because land treatment
5 in the upper basin in the Cuyahoga in the Three Rivers
6 Watershed seems to be even more cost effective than going
7 to Level 1 with either advanced biological or physical-
8 chemical.

9 In Plans B or C, the concerns over area lagoons
10 would be removed with a substitution of activated sludge
11 with an added cost associated therewith.

12 Again, Plan C is unacceptable to the public of
13 North Central Ohio.

14 The cost comparisons on an average annual cost
15 basis for each possible decision is displayed on this chart.
16 You will note the delay on a final decision to go to any
17 plan increases the cost of that plan. Let me give you an
18 example:

19 If one chooses Plan B in 1975 and retains Plan B
20 as a final alternative, the annual cost is \$244 million.
21 If one proceeds to a final decision on Plan B by first making
22 a decision to go to Plan A₁ in 1975, the annual cost
23 of Plan B is \$258 million or \$14 million annual average
24 cost increase.

1
2 This difference is associated with the requirement
3 to build secondary treatment in-basin prior to 1977 to
4 meet Public Law 92-500 goal, and this requires continuation
5 of the activated sludge plants in the upper basin instead
6 of initially constructing the aerated lagoons specified in
7 early implementation of Plan B. The savings in cost of going
8 to Plan C in 1975 over that of delaying that decision to
9 1980 is as much as \$30 million annually.

10 Now, I have got a set of conclusions that I would
11 have gone through but I don't see any need of doing that
12 tonight. You have them in your handout.

13 I would only add one thing here from last night,
14 and I have already stated it, and that is that Plan C is
15 probably unacceptable to the citizens of North Central Ohio.

16 I do invite your written review of this planning
17 effort, and I would solicit your comments in consideration
18 of this final report which is scheduled for publication
19 in August. We will report all of your public inputs, and
20 if they are written we will reprint them in the public
21 brochure that goes with the final study effort.

22 We have already manufactured public involvement
23 appendices on all previous public involvement or public
24 meetings that we have had and have in those also reproduced

1
2 all of the documents that you have provided to us.

3 We need your public expression as to the acceptability
4 or nonacceptability of any of the plans or any pieces of
5 plans, and we would like to have that prior to 15 July,
6 so that we can interject that into our final effort and,
7 in fact, change our final effort, if that need be done.

8 Our final effort is due to the State of Ohio and
9 on up the ladder by 1 August.

10 Thank you very much for your attention.

11 I would now like to turn the podium over to Mr.
12 Jim Schafer from the Department of Natural Resources, State
13 of Ohio.

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2 MR. SCHAFER:

3
4 Thank you, Colonel.

5 As I look through the audience, I recognize a lot
6 of people who I have known and worked with. I formerly
7 worked with the City of Cleveland in their Water Pollution
Program there.

8 It is a great pleasure for me to accept the respon-
9 sibility of commenting for the State of Ohio on this plan.
10 The Department of Natural Resources and the Ohio Environ-
11 mental Protection Agency have worked very closely with the
12 Buffalo District throughout the effort, and it has been
13 an enjoyable experience.

14 I would like to add at this point that we did
15 encourage the Corps of Engineers to pursue all possible
16 alternatives, including total land treatment in their eval-
17 uation, barring no alternatives that were available, and
18 I think they have done an admirable job doing that.

19 In viewing the wastewater study --

20 (The rest of the paper is included in Exhibit No. 2
21 attached hereto.)

22 Thank you.

23 DR. O. E. ELZAM:

24 Are you available for questioning?

1
2 MR. SCHAFER:

3 Yes, I am.

4 DR. ELZAM:

5 I would like to raise several important questions
6 because a few minutes ago you raised the possibility of
7 using spray disposal in reclamation. One of the counties
8 uses this. I don't know what the reason for that is.
9 Our experience, and I am from Case Western Reserve University,
10 I am a faculty member there, and we have been doing work
11 in cooperation with Harrison County, and we did not find
12 that there was such a tremendous problem in Harrison
13 County or counties where there is a very abundant supply
14 of limestone. However, we are very distressed that there
15 is very little done in going into the massive new areas
16 of strip mining in Southeast Ohio which are rich with
17 sandstone. No one has looked at that.

18 We have been trying over there to do some reclamation
19 of land in sandstone areas, but it is phenomenally bad,
20 the total is fantastically high, and nothing was done
21 for five, six years after strip mining was done.

22 I feel that there was some kind of lack of communica-
23 tion here where there is a proposal for Harrison County.
24 What they have done there is not as severe as it was

2 elsewhere. I understand now they intend to spend \$50,000
3 for six months. I think this is a waste of money while
4 we have tremendously vast areas that have been attempted
5 to work on, and we don't know how to reclaim these areas.

6 Now, I think if this is the proper time, it is
7 high time that this type of area, the proper area should
8 be used for reclamation. Okay?

9 And the sludge should be put in this particular
10 area to see if we have any capabilities whatsoever in
11 reverting this very serious situation.

12 Now, I feel, and I am very glad that you included
13 Case Western Reserve University in your recommendations,
14 but I have been frustrated -- okay? -- now for about a
15 year and a half, almost two years, starting with the
16 Department of Natural Resources where we got no place,
17 and then with the EPA. Finally we have gotten there -- okay?
18 -- to do some reclamation in Guernsey County, mainly be-
19 cause it has a very, very high count of sandstone in the
20 area, and now I am forced to think we have the background
21 of transporting steps down, getting the okay from the
22 City of Cleveland through the operator that is now sending
23 us his landfill to do this particular experiment.

24 I think that money should be put in certain areas

2 but it should be put in the right places. Harrison
3 County is not particularly the best place.

4 That place is where we are doing it now, south on
5 Highway 70, and I am worried, I am worried stiff what's
6 going to happen.

7 (The speaker was in the back of the room and the
8 reporter had difficulty getting him, the above is simply
9 the gist of what he said. The tape recorder got nothing
10 of this part of the professor's contribution.)

11 COLONEL MOORE:

12 You mean the current mining practices? Is that
13 your concern?

14 DR. ELZAM:

15 No. I am talking about what is in overburden.
16 That's what worries me.

17 Now, we are getting most of our so-called reserve
18 for most of the companies south of Highway 70. The amount
19 of limestone in the overburden is so low that there is no
20 naturalization of acidity. That sludge, you see, from
21 the City of Cleveland, and from Canada, and from Akron
22 is very important to put in this area because here we
23 have a very good source for neutralizing this acidity,
24 and we don't have to go to Harrison County.

I have literally thousands of pieces
of data from Harrison and Wood County, and Guernsey County.
We can show that the overburden situation is even better
than what the land used to be before. I would say you can
with proper practices bring a better land into the limestone
area; but in the sandstone area, we have a bit of a problem,
too. That is where if there is \$50,000 going into it,
this is the direction we go, because at the moment, as I
said, we are arrested. I got finally from the Ohio EPA
in Guernsey County, the Health Department, and the EPA,
got the okay to interpret this. These are the areas we
have gone into in our conclusion, and not to go and see
another property in areas even near Akron.

I don't know that we need to do this thing around
Akron whatever. We have an energy crisis. Let's go out
and put our resources or money in the area that we are
going to mine for coal.

COLONEL MOORE:

Can I take the lead on this, Jim, for just one
second?

Could I have your identification by name, sir?

DR. ELZAM:

I am Professor Elzam from Case Western Reserve

1

2 University.

3 COLONEL MOORE:

4 I just wanted this for the record.

5 DR. ELZAM:

6 Okay.

7 COLONEL MOORE:

8 Your point is very well taken.

9 There was no concern on anybody's part to have a
10 first or a second dose, having the first in Harrison County
11 and the second somewhere else, and there is no question
12 that when there is limestone in the soil that you get a
13 better -- you don't have as bad a case, if I can put it that
14 way.

15 We are talking about bad versus poor. We are not
16 talking about good versus bad. We may have chosen the bad
17 versus the poor to start with, there is no question about
18 that, but you have got to start somewhere, and the fastest
19 way to start is get the guy who will agree to get it and
20 you don't have any problems with it. The first guy to
21 agree to go over it to the State in full force I believe
22 has been Harrison County.

23 Now, the State would have to address that situation.

24 I can't.

1
2 DR. ELZAM:

3 | That's correct.

4 | COLONEL MOORE:

5 | So the squeaky wheel got the oil, so to speak.

6 | And I might add that we brushed this thing off like
7 | it was the greatest thing since TV, and there are some
8 | concerns about it, and they have got to be resolved, one
9 | of which is, if you don't retain the sludge in place, as
10 | you place it on the ground, will it stay in place in fact?

11 | And so there are people back here from the Corps
12 | district called Huntington which has the Harrison County
13 | area, because that's not in any district, and I don't have
14 | the responsibility for it, who are very much concerned
15 | that a project in Harrison County might well pollute or
16 | further pollute, if that's possible, the Ohio River.

17 | So all of these things have to be watched.

18 | Secondly, they are going to truck it out and
19 | it is on a trial basis for a year. I think we do not need
20 | monitorship. We have got data that will stack up galore,
21 | and that's true. We have got it on land treatment systems,
22 | too, but I don't know that we probably have analyzed it
23 | and probably resolved it. And, you know, it is one thing
24 | to have scientific data; it is another thing to convince

1
2 the guy that's going to receive it on his end that that
3 scientific data is correct. And no matter how good, you
4 know, we are in our deliberations and our data control
5 and our data feed in.

6 So I think, though, the very basic issue you are
7 talking about is whether we go to the bad first or the poor
8 first is not one really that need be settled on any other
9 basis than the first one to squeak was there and, No. 2,
10 I might say, the capacity to renovate the soil in Harrison
11 County quicker and turn it over to productive land has a
12 less risk factor in it than going to the place you are
13 talking about and return it to productive land in a short
14 period of time.

15 We are looking for productive land, too, to help
16 other crises as well, and that is beef growth, and certainly
17 we have all been to the market to buy a pound of steak lately.

18 DR. ELZAM:

19 You see, the thing is, your question is very well
20 put, we do want to have a better productive land, but
21 the situation is and, as I said, I don't know who has
22 taken the samples before and who has monitored the situation
23 -- as I said, we literally have tens of thousands of
24 samples through Southeast Ohio, and we have literally

1 exhaustively looked at the whole area, the limestone area.

2 The situation there is not very poor, it is not very bad
3 at all, as a matter of fact; but in the sandstone area,
4 you see, the situation is disastrous.

5 Now, should we go out and find out that the land
6 can give us all probably a few more pounds for meat to
7 put on the table -- okay? -- make sure that the water
8 that is leaving our land in Southeast Ohio is getting worse
9 and worse and worse, and it is not getting any better.

10 Okay?

11 I would take the situation where we need the
12 energy, we are going to get it out of there. I don't know
13 any other way of getting it. So let's do the best possible
14 job with whatever we have.

15 So that is my greatest criticism for Harrison
16 County, and it is for six months and it seems to me, you
17 know, it was a hurried decision. I have been out to the
18 EPA now for a year. This is why I am saying if it was
19 a legal matter and we got it, but the thing is here we
20 have a natural place where we have to put all of our
21 attention, the sandstone rich areas that gives water at
22 2.7, 2.8 constantly and in Harrison County it is 8, 7.9.
23 That's not so bad. So there is about 4.5 that's in

1
2 comparison. Okay? So the situation is --

3 COLONEL MOORE:

4 No, it is not okay, because I have been in Harrison
5 County and I haven't seen a cow go in there yet except
6 one per five acres, and I would hate to run that farm.

7 DR. ELZAM:

8 That's fine but the situation is what is the quality
9 of the water in the area. That's what we are worried
10 about.

11 COLONEL MOORE:

12 No, sir, in this case we are not worried about the
13 quality of the water leaving the area. We are worried
14 about the restoration of the land.

15 DR. ELZAM:

16 So you are not worried about the water? We are
17 worried about that more than anything.

18 COLONEL MOORE:

19 I recognize that in your statement now.

20 DR. ELZAM:

21 We cannot allow that.

22 COLONEL MOORE:

23 But the tie-in of Harrison County to the product
24 of this study was not in fact worrying about the quality

1
2 of the water in Harrison; it was worried about the land
3 in Harrison County.

4 DR. ELZAM:

5 Well, that's what I wanted to say.

6 COLONEL MOORE:

7 Well, you have got your chance.

8 Do you want to add anything, Jim?

9 Nobody disagrees with you. It is just a matter
10 of concern and you will certainly have an opportunity to
11 express your concern. Your institution is going to be
12 represented in the committee, as I understand it, the
13 State proposal.

14 We would normally now go into a discussion by
15 you, the public, on statements, and if I may do so, I
16 will ask you to hold any further questions and answers
17 until the end of that because this is your time to talk
18 and not mine.

19 So let me get to the other podium where the
20 cards are and I will call them.

21 Jack Garner, Summit County Sanitary Engineer.

22 JACK GARNER:

23 Colonel and Mr. Schafer: We appreciate this
24 opportunity to be able to make some comments tonight.

1
2 Unfortunately, personally, I have not been able to study
3 the study to the extent that the study does deserve. How-
4 ever, I would like to express a few concerns on behalf of
5 local government and particularly in Summit County.

6 It is a little bit of a concern to us that appar-
7 ently the study is based on the Northeast Ohio Water
8 Development Plan which, as we understand it at this point,
9 is not an official document and not a document that is
10 readily available for public perusal and review, and what
11 have you.

12 Unfortunately, in Summit County at the present
13 time we do have some problems with the Northeast Ohio
14 Water Development Plan, as we understand it.

15 The proposal as the Corps is outlining, as we under-
16 stand it, calls for basically 26 plants is of I think
17 considerable concern to Summit County because we have
18 several problems that demand solutions right now which are
19 going to mean that we are going to have to construct plants
20 other than the plants that are called for in the study.

21 For example, at the present time we are having
22 I guess you would call it a running battle with the
23 City of Aurora and the Ohio EPA as to whether there should
24 be a plant constructed to serve the western portion of

Aurora discharging upon Brook or whether, in fact, the Twinsburg plant should be the regional plant in that area.

We are faced with having to do something in that area and it does appear that there is going to have to be some plant in that area.

Considering the practicality of the financing whereby probably the financing of any plant would be about 20 years, and also realizing the facts of development whereby development will probably occur which will force additional expansions of whatever is finally decided on there in the way of a plant facility prior to the 20-year financing elapsed, it seems like we are going to have a continuing debt service on treatment facilities that will probably last beyond 1990, 2000, what have you.

Obviously, it is Summit County's hope that the State and Federal Government will see their way clear to endorse the more regional project in that area. However, the point I am trying to bring out here is that it does not appear that the consideration of having the Cleveland Southerly plant to be the treatment plant for that area is a practical consideration at this time.

Also bearing in mind the fact that apparently
in Cuyahoga County along Tinkers Creek, Bedford, Bedford

1
2 Heights, and Solon are more or less doing their own thing,
3 treatmentwise.

4 It does not appear a practical consideration at
5 this time to have the Tinkers Creek branch of the Cuyahoga
6 Valley interceptor extend through Cuyahoga County and into
7 North Summit County.

8 So it appears that we are going to have to have a
9 more or less permanent plant constructed in the Aurora-
10 Twinsburg area.

11 We also note that the Corps study is indicating
12 that the Kent plant should be converted from a biological
13 plant to a physical-chemical plant, and that the Kent plant
14 should then apparently be the regional plant in that area.

15 As we understood the Northeast Ohio Water Development
16 Plan recommendations back approximately a year ago, there
17 would be the Kent plant that would serve Kent, and then
18 there would be the Fish Creek plant that would be constructed
19 by Summit County west of Kent.

20 More or less based on that kind of consideration,
21 Summit County is now proceeding post haste to develop
22 detailed plans for this Fish Creek plant.

23 We are also at the present time negotiating an
24 agreement or a contract with Portage County whereby

1
2 the areas in Portage County south of the City of Kent
3 would not go into the City of Kent plant but into the
4 proposed Fish Creek plant. Again, this seems to be a
5 conflict with the proposed Corps study.

6
7 Summit County has also had a study prepared for
8 the northwest portion of Summit County that is going into
9 a new 10 million gallon per day plant to be constructed
10 between Akron and Cleveland Southerly. This report has
11 been submitted to the State for their review, and we have
12 not at this point in time received any feedback from the
13 State on that.

14
15 I might add that we are at the present time also
16 negotiating or attempting to negotiate with the Cleveland
17 Metropolitan Regional Authority for the extension of the
18 Cuyahoga Valley interceptor into northern Summit County.
19 However, considering the practicality, the political
20 problems, and also the fact that the construction of that
21 plant appears to be substantially cheaper than going into
22 Cleveland Southerly, it would appear that the most prac-
23 tical solution at this time would be to have that plant
24 constructed.

25 Again, that plant would serve not only what we
26 would call, generally speaking, the Richfield area, but
27

1 also that area served by the present Macedonia Plant No. 15.
2 That plant at the present time is under a building ban
3 from the State. The State has indicated that that plant
4 should not be expanded at that site.

5 So as soon as the State makes its feelings known
6 about the report, this has been submitted to them, and
7 if we have any differences of opinion, hopefully those
8 differences can be resolved in an expeditious manner and
9 we will be going with something there as soon as possible.

10 Again this is going to be another long-term financial
11 commitment.

12 It is a little bit of a concern that apparently
13 neither the Northeast Ohio Water Development Plan or the
14 Corps study has really addressed itself to the water
15 quality aspects of things.

16 We have the feeling that perhaps neither side has
17 really told the public or the local officials that have
18 to implement something what really has to be done, what
19 really has to be done in order to protect water quality
20 of these streams, and this is of some concern.

21 We would look forward to the State establishing
22 effluent standards as soon as possible so that we would be
23 able to design facilities as soon as possible.

1
2 However, even with the lack of effluent standards,
3 it does appear that any plant that's constructed is going
4 to have individual tertiary treatment or advanced wastewater
5 treatment, whatever you want to call it; that we are long
6 past the day when we could consider secondary treatment.

7 So if any of the study alternatives consider land
8 disposal as being a subject let's say for advanced
9 waste treatment to be provided at a plant, again from a
10 practical viewpoint I am not sure that this is something
11 that we could consider because at this point there generally
12 appears to be no question in our minds that we are going
13 to have to provide advanced waste treatment at the plants
14 we are going to be constructing.

15 The costs that are being projected are also of
16 some concern. Going through them real quickly we kind of
17 have the impression that perhaps we are talking about an
18 annual cost to an individual home something like about
19 maybe \$300 or so and, realizing that up to this point in
20 time the public has indicated they do want clean streams,
21 we are also beginning to get the feeling that perhaps the
22 public might be less than willing to pay for everything
23 that's going to have to be done in order to get those
24 clean streams.

For example, there is a major community in Summit County that was going to double its sewer rates and as studies indicated maybe they ought to be increased 75 per cent, the local officials decided perhaps a 50 per cent increase would be more in keeping. And I think, not to point a finger at anybody, but I kind of get the feeling this is just the way the public is reacting. So what I would like to suggest very specially to the Corps and to the State that perhaps rather than giving additional consideration to land treatment, let's say of the liquid waste, that perhaps the studies in the future concentrate on the sludge disposal problem, and that we face the realities and practicalities of we are going to have to provide very sophisticated plans to take care of the liquid waste disposal. We are going to have to dispose of those liquids at the point of the plant location. And again, because of the practicalities of life, we are going to have to construct many more plants than the 26 that are called for in your report.

Thank you very much, sir, for this opportunity.

COLONEL MOORE:

I ought to respond to some of your issues because they are vital. I can't address myself, obviously, to

1
2 your individual plant concerns because I haven't been with
3 the State at any level of the State to discuss plans that
4 have been set up by local governments and are held by the
5 State.

6 We followed the Northeast Ohio Plan because we
7 knew there were decisions made against that plan in the
8 short term, and we did attempt in the 12 alternatives to
9 improve upon the Northeast Ohio Plan.

10 There are some areas in which you know in a debatable
11 way you may improve or not improve, depending on which side
12 of the ladder you are sitting. They are, in fact, in
13 the city and are, in fact, available for a look.

14 I don't know that any of them that you brought up
15 are that kind. I would only say to you that a plan of
16 any kind on a regional basis for wastewater management
17 is a must in the future because we cannot afford tertiary
18 treatment plants at every location where we have a
19 secondary treatment plant today; it just cannot be afforded.

20 Secondly, I would say to you that the thing that's
21 going to govern how fast we get there is not going to be
22 so much the concern of water quality, although that's the
23 goal sitting there for us to achieve, but how much money
24 can we afford to get there annually between now and the
25

1
2 year 1977 for a secondary treatment plant, 1983 for a
3 push up to Level 1 maybe, and then have a plan available
4 to get by 1985 to Level 2, if that be the goal.

5 Now, Level 2 hasn't been defined at the Federal level
6 yet on standards and you are absolutely correct, and I am
7 not sure whether the State has passed their water quality
8 level stream quality level, or effluent level standard
9 or not. I understand they have been thinking about them.
10 I know ours was based on the Mahoning River study which at
11 that time was the best that was available.

MF :2

12 We defined, the Corps defined for its study purposes,
13 the Level 2 criteria which was not defined except to say,
14 "No discharge of critical constituents." And if you believe
15 that right to the letter, we haven't achieved that in the
16 cost factors we have shown you.

17 However, the law also states that you are not
18 required by the goals or objectives to reach that final
19 goal to get to secondary treatment except by 1977, and
20 the funding is less than required to do that because the
21 law started out in its concept with a 50 per cent Federal
22 funding and 50 per cent State and local. In the final
23 analysis it was changed to 75 per cent Federal and 25 per
24 cent State and local. I am talking construction costs now.

1 || And yet the funding was not increased appropriately
2 at the Federal level for the budgeting of it. So you are
3 now paying, at least budget money, for a 75 per cent share
4 federally out of the budget funds that were initially funded
5 for 50 per cent share, and since then it has been reduced
6 from that.

7 So I think you are not going to see the kind of
8 plan that we envisioned here in our planning process as a
9 plan to achieve the goal as was the Northeast Ohio plan
10 at the goal it established for itself at the point in time
11 that it was done. That's not the purpose of planning,
12 and neither is the purpose of planning dictating today
13 that there will be 26 plants or 27 plants or 28 plants.
14 But what the plan does is provide under the assumptions
15 that can be made and the guidance that can be agreed upon,
16 an over-all objective, planningwise, to be achieved
17 against the desires and concerns and needs today of the
18 local communities which as they filter up for decision
19 by the State would be compared against an over-all objec-
20 tive plan, and if more cost effective than that plan, the
21 plan would be discarded for that purpose, and that would
22 be instituted within the plan as the needed goal today
23 or the needed objective today.

1
2 Therefore, the plan must be flexible, it must be
3 viable, it must be subject to change at all times, and a
4 most important criterion within the plan is that it is
5 made upon predication, on things to happen in the future
6 today, and as the future unfolds, those predictions, oddly
7 enough, change, and if they change appreciably, the plan
8 has to change with them.

9 So let's don't get a fixation about the Northeast
10 Ohio Plan, any regional plan done for water quality, or
11 any other thing, that's a fixation, you know, a mask. It
12 is going to be achieved in that configuration and in that
13 order and only that because if that's the case, I wouldn't
14 give the study to the State of Ohio, because I would be
15 remiss in doing so. And I don't think they would accept
16 it in that fashion.

17 Now, that's all I could say about it.

18 Did you want to add anything, Jim?

19 MR. SCHAFER:

20 No.

21 COLONEL MOORE:

22 The purpose of a regional study is not to dictate
23 to the local, I should add this, what he should do. It
24 is only a measure for the State to weigh against the local

1
2 desires what is the most cost effective over all because
3 they must integrate local government in order to achieve
4 such cost effectivity in the total measure.

5 I would take -- and I don't mean to have a pro-
6 fessional battle between you and I, sir, but I would take
7 a discourse with one of your statements, and that is that
8 land treatment ought to be done away with, and we ought
9 to look at sludge disposal only.

10 I would suggest to you, sir, that the cheapest
11 alternative for you is tertiary treatment, particularly in
12 areas that are not densely populated -- that the cheapest
13 alternative for the taxpayer is, in fact, land treatment,
14 and that the best alternative for the recycling of those
15 nutrients if properly designed is crops back to the human
16 and back to the soil, and we have some energy crises that
17 we haven't talked about. And although land treatment
18 requires about twice the consumption of power, electrical
19 energy, it requires about one-third the consumption of
20 chemicals.

21 And we have got, I guess, a phosphate crisis on
22 our hands but we better put some of the stuff back in
23 the soil or we are not going to be growing crops pretty soon.

24 So we got some real concerns that maybe land

1
2 treatment or the land application of agriculture after
3 the nutrients and stuff are extracted in any process of
4 technology, we place it back on the soil.

5 I might add one thing. A lot of people have ques-
6 tions about land technology, and I do, too, and I have
7 expressed those questions in the concerns and tried to
8 answer some of them. I can't answer them all.

9 I would only say to you, sir, that the same concerns
10 are there for all the other technologies as well because
11 we haven't answered the questions on those, either, and we
12 have no more assurance that they will work than that land
13 technology will work in the final analysis so we have the
14 quality of effluent that we desire.

15 Yes, sir.

16 DR. ELZAM:

17 I got a little bit distressed when I heard that
18 the land use is probably not a very good alternative. Now,
19 we have to be very careful about that. In Germany they
20 have been doing that for many years. In Melbourne, they
21 are making money out of using sewage in agriculture.

22 Now, I don't know what kind of technology you can
23 use in order to remove all the pollutants that we have.

24

1
2 The Colonel here has mentioned very, very truly
3 that we have a phosphorus crisis and we better start
4 bringing back the nutrients into the land.

5 There are some beautiful experiments going on
6 throughout this country, especially at Penn State University,
7 where they show that in a city of a hundred thousand people,
8 you can tag very easily the sewage and put it on the land
9 and increase the productivity of that land directly.

10 So let's take it in perspective. The thing is
11 when we are talking about the Three Rivers basis and
12 to take all that water so far away and put it in some other
13 people's back yards, they are very highly distressed by
14 it. But, you see, we can use some of the land around
15 here and do some darn good job out of it.

16 You see, my area is plant nutrition and we can
17 literally control almost what the plant can take and
18 what it cannot take. We have to study, of course, the
19 problem with heavy metals. This is what bothers me.

20 It doesn't bother me the part about the nitrogen, but if
21 you find a very good way of taking all the nitrogen
22 out of your water, how could you do that? The land can
23 do that for you very, very good.

24 On the phosphorus, of course, there is no problem

1
2 at all. I mean, you have shown that and many other people
3 have shown that a hundred per cent you can remove out of
4 the system very easily.

5 So here we have a very beautiful way of cycling
6 our nutrients back into the land, and we take it out, and
7 what have you.

8 The thing is we have a psychological problem here.
9 So I agree with you a hundred per cent on this particular
10 thing.

11 COLONEL MOORE:

12 Thank you very much.

13 Yes, sir.

14 MR. GARNER:

15 I didn't mean to imply that I didn't think land
16 management, land disposal wouldn't work. I was trying to
17 indicate from a practical viewpoint, at least, as far as
18 some counties are concerned, at this point it does not
19 seem that land disposal is the most practical way for
20 Summit County to go.

21 It seems like the closest site, according to the
22 report here, would be perhaps along the Mahoning River
23 in the Lake Rockwell area. I have a gut feeling that
24 perhaps the Akron Water Supply Department would be a

little bit concerned about that at this time, although I might be wrong in that.

But it just seems from a practical viewpoint, considering the State's requirement at this time, we are going to be forced into advanced regional plant sites, and we can all wish that the practicalities of life would be different, but I am constrained to say it isn't practical right now.

COLONEL MOORE:

Yes, I think our planning calls for the evolution you are depicting, land treatment, anyway, in-basin or out of basin where secondary treatment plants already exist, and we will just upgrade this and tie onto land in an evolutionary process.

The decision that needs to be made immediately is where you don't have a plant at all, and there are some of those around. If you are going to go land treatment, why, you don't have a plant at all today, you ought to make that decision today. You ought not to make it 20 years from now because it will cost you more. You ought to make it today.

Thank you for your comments and thank you, sir, for your comments.

1
2 I have Mr. Henri Rigo. Is that correct?

3 MR. RIGO:

4 Yes.

5 COLONEL MOORE:

6 Civil engineer, self-employed, speaking for himself,

7 I guess.

8 MR. RIGO:

9 I have a simple question and that is concerning
10 the need for perhaps more advanced studies in the application
11 of a technology.

12 What is the Corps' position or your recommendations
13 in this area?

14 COLONEL MOORE:

15 Thank you, sir. That is a good question. I have
16 covered that in my previous sessions of public hearings.

17 It has been Buffalo District's concern in conclusion
18 in this study and recommendation, at least to us, to
19 the State, that they pursue a rigid course of monitorship,
20 of early action construction programs.

21 I don't believe in a demonstration program just
22 to demonstrate. I think that unless you are going to
23 put it as a viable plant tied onto a working, existing
24 community, if you give it to me to demonstrate and you

1 : let me put it into my atmosphere, I'll make it work, you
2 : know.

3 : I would like to test one that really works for the
4 public.

5 : So we suggest that very shortly, very soon I think
6 : the recommendation is from the State paper which will show
7 : you that they have accepted most of this and have felt
8 : that way themselves, in fact, have driven most of it, that
9 : we ought to tie onto the Southerly Plant which is going
10 : to be an advanced biological and physical-chemical, and
11 : tie onto it and monitor it, and don't stop monitoring
12 : after two years and say, you know, "Great, we have made it,"
13 : because the problems we are talking about aren't going to
14 : show up in the first two years.

15 : You know, we have got to continue the monitorship
16 : and we ought to continue it, anyway, through regulations
17 : by Ohio State EPA and other agencies of the State, the
18 : Health Department, et cetera, because the effluent flowing
19 : out of there is very critical.

20 : We today are in a problem on secondary treatment
21 : plants because we have overloaded them, you know. We
22 : have let them disintegrate from lack of maintenance in
23 : some aspects because operation and maintenance are the

1
2 hardest funds to get in the world and, being in the Army,
3 I can truthfully say that. We don't mind building them
4 but we hate like the devil to spend that annual maintenance
5 money to keep them up, and when you don't, you don't get a
6 hundred per cent effectivity out of the plant, and you
7 know that better than I, you work with it.

8 So a real crucial element in this is not the
9 construction so much as it is setting the appropriate
10 regulations in place at the State level, the local level,
11 and all the way down the pike to make certain that this
12 meets definite criteria, are monitored to insure that the
13 criteria are operated, maintained properly, and the people
14 are properly trained to do that, and that in itself is an
15 horrendous task.

16 We suggest not only you monitor Southerly as an AR,
17 if you build on an initial physical-chemical PC plant, you
18 monitor it, and the first guy that wants a plant treatment
19 facility -- and I might add Bucyrus out in the North Central
20 area has requested a land treatment site, and the State
21 has said they will consider these like any other tech-
22 nology, and when you do that, monitor it, and for the heavy
23 metal problems that he mentioned, we chose the industrial
24 option only because of that concern for heavy metals.

1 We think they ought to be made to take the heavy metals
2 out of the water until such time as it can be proven that
3 it is not going to harm the soil, because a hundred years
4 from now it is hard enough, you are paying a lot of money
5 to take it out of the water, God knows what it will take
6 to take it out of the soil if you pollute it. So we don't
7 want to run that through a filter bed in the future.

8 We have got to have the monitorship of the program.
9 I think the State fully understands that, fully concurs
10 with it, and would go no other way. And I think that's
11 why we are moving very slowly in our decisions on how to
12 go for the tertiary plant, not so much the secondary plant,
13 and upgrading everything to a secondary level first, and
14 the first priority, gentlemen, for the expenditure of funds
15 by the Clean Water Act amendments is secondary treatment
16 at all places prior to institution of advanced treatment
17 anywhere else. And I think that's what you are following,
18 too.

19 That's the best I can state it. Does that kind
20 of answer you?

21 MR. RIGO:

22 Yes. Thank you.

23 COLONEL MOORE:

24 There are lots of demonstration projects. There

is a study coming out by Penn State on the exercise --
the gentleman mentioned we have the first two years of that
study effort and the documentation of data for the first
two years, then the publishing of a 10-year report in
August.

I would highly recommend to everybody who is interested in land treatment and its capacity and capabilities to get that report. I don't know whether it is going to be good or going to be bad, and I really don't care, but I think if we are interested in it, we ought to get that report and look at it.

The American Public Works Association, of which I am a member, is also going to publish a report, and that report will be published in August, and it is a compendium of a look at all land treatment or 119 some odd land treatment sites throughout the world, and compares the data base.

The main finding of that one would support your thrust to me which is, you know, aren't we going to monitor some of these things so we can get some data? And it says there has been a lot of sites built and there has been a lot of data gathered but it hasn't been properly arrayed or properly analyzed, and nobody looks at that piece of it. And that will probably be one of their

thrusts in their report.

That is the best I can answer you, sir. Would anybody else like to speak?

Does anybody else have a question or a concern they would like to make?

Would you come up and state your name, would you mind, and the question?

- - -

1 MR. STIPLEY:

2 My name is Ralph Stipley. I am a Councilman of
3 Middleburg Heights.

4 I would have to say that I am surrounded by a
5 considerable amount of talent, and I am more or less lost
6 in the whole topic. Mine becomes one of simple economics
7 and how I look at it as a working man representing the
8 people.

9 If I am correct in what I am led to believe, we
10 have to take phosphate out of the water, et cetera, and,
11 as I recall, our engineer says for taking phosphate out
12 of the water we create as much as 60, 70 per cent more
13 sludge, and then we have trouble getting rid of the sludge.

14 Then I immediately go to a very simple approach:
15 Why put the phosphate in? And if I have to buy chemicals
16 to take it out, and I am a taxpayer, and we have a sewage
17 treatment plant, and the users have to pay for it, why
18 don't we tax the phosphate products if we have them?

19 That, of course, is oversimplification, but I don't
20 have the background that most of the people in this audience
21 have, and this is the type of thing that I want answered,
22 because I would much rather buy time by doing the things
23 I know can be done now easily, readily, and something
24 that most people can understand, than to try to attempt to

2 explain an engineering report, a very detailed statistical
3 report, having me go and ask for our city to get money to
4 expand trunk lines and then to be told since our plant
5 is rather recently new, in my own mind, started in 1964,
6 and future in operation two or three years later, that
7 we must treat phosphate first, I would think it would be
8 much better to have everybody treat it through the plant
9 with what we can do to it than to be told we must do
10 something else before we can tie these other people in.

11 There has been gentlemen in here that have mentioned
12 we have conflicts between State and Federal, and I agree
13 with this wholeheartedly. I wish some of the higher-ups
14 would sit down and put their heads together and come up
15 and tell us which they would really like to have because
16 they can't have one from one side and one from the other,
17 and we have had enough that has recently been written up
18 in terms of immediate, in terms of Akron, in terms of
19 other communities where one states they must build this
20 plant and one says they must not build it.

21 And I am sorry, those are the answers I have to
22 have before I can get deeply involved in an over-all picture.

23 I am interested in buying time and I am interested
24 in directing as much as I can immediately to buy me

1
2 enough time to go farther.

3 We have written a resolution in our community and
4 sent it downstate to our legislative body asking for a ban
5 on phosphates, or taxes on the phosphate products to be
6 returned to the communities who have the plants that are
7 treating for this. Because I don't believe the few
8 people that are maybe in a community should have to pay
9 for the cost of something, No. 1, they don't put in, or
10 pay for the cost from other communities' runoff, what have
11 you, where they are not getting a return from it. That
12 is not spreading a burden out.

13 So when you want to solve a problem, I want to
14 know how you are going to pay for it and spread it equally.

15 Thank you.

16 COLONEL MOORE:

17 That's a very good point.

18 We have bought a hundred years of time by hiding
19 it in the water. I don't know how much more time we need
20 to buy.

21 I did not discuss just the extraction of phosphates.
22 I only mentioned phosphorus as an energy crisis. That's
23 not in the future but is on us now. And if I led you to
24 believe the only thing we want to extract from the water

1 is phosphorus, your position on how to attack that problem
2 is a lot better than the one that I just showed you, let's
3 ban it from products that are used. I don't know what your
4 shirts are going to look like tomorrow, but we ought to ban
5 it, we ought to reduce it, and that's the way to attack it.
6
7 I agree with everything you have said, sir.

8 MR. STIPLEY:

9 Just to correct the record, that is not all I want
10 removed. I want to remove more than that. And I am
11 really not concerned that my shirt is gray because everybody
12 else's will be gray, too. But I think we had better water
13 20 years ago before we had this, so let's go back to that
14 point and solve some of the others.

15 COLONEL MOORE:

16 Yes. The aspect of what it costs is a little bit
17 misleading in the dollar figures. The dollar figures I
18 have shown you are the capital cost outlays as well as
19 the operation and maintenance cost economically programmed
20 over a 50-year period and brought back to an average
21 annual figure. And that's what you have seen.

22 The capital cost at Level 1 costs about half as
23 much as Level 2 in the final analysis, and about 60 per
24 cent of the cost is capital. 40 per cent of the cost is

1
2 capital and 60 per cent of the cost O & M. Of the 40 per
3 cent cost to the system, the Federal Government would, in
4 fact, cost share; but that doesn't help you any because
5 the dollars, no matter whether it is disbursed at the local
6 or Federal level, come all from the same taxpayers. So we
7 all share in that cost.

8 The total cost is what you saw.

9 The total of the local and the State cost is the
10 total of the O & M and 25 per cent of the construction.

11 Yes, sir.

12 A VOICE:

13 I wonder if we can call on a representative of the
14 Three Rivers Watershed to give their views because, so far
15 as counties are concerned, we are one of the participating
16 ones.
17 - - -
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19
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24

2 MR. ODEAL:

3 My name is Erwin Odeal. I am District Engineer
4 for the Three Rivers Watershed District.

5 We are probably in the same boat as everybody else,
6 and they suggest reading reports. A few times we have
7 gotten through the summary and we have gotten through it
8 all maybe a couple of times.

9 If you are going to digest some of the material,
10 we sent to the Colonel a few days ago written first pass
11 remarks, and I think we have called them first pass remarks,
12 and I think that we have all the concerns that Mr. Garner
13 has expressed. These are the same concerns the State has.

14 I think we have heard Dr. Whitman say the other day
15 we really have got too many plans now and no action.
16 And this is a concern.

17 We have a regional sewer district plan in the
18 Cleveland area. We have plans in the Akron area for
19 improvement to the treatment plant. We have plans done
20 by Summit County. We have a number of plans and I think
21 that we have to be extremely cautious in what we are talking
22 about here because it may jeopardize the present action
23 and public officials, I think it has been pointed out,
24 are faced with a real problem, as is the Councilman here.

1
2 He is the guy that has got to get elected. He is the guy
3 that has got to raise the rates. We had Mr. Garner here,
4 he is an operations man, he has got to make do with what
5 he gets.

6 There is definitely a limit to what people are
7 going to pay for, and I think that the true impact of
8 the cost of the study is reflected in the way the cost
9 figures are presented. I think we need to present the
10 cost figures in terms of a stage type of program. We can't
11 take an average amount, we have got to indicate what the
12 cost is per thousand cubic feet of water in 1975, in 1980,
13 1985, 1995. This is the kind of thing I am interested in.
14 You are interested in what is this going to do to my water
15 bill. This is the true impact.

16 I feel that personally I can't speak for the District,
17 but I feel personally before I could ever justify going
18 into anything like a Level 2 or a drastic Level 1, we
19 have got to show what this is going to do in a stream.
20 We can't talk about spending hundreds of millions of dollars
21 and say we don't have the money to model the streams.
22 This is absurd.

23 So that we have got to have money to get it out of
24 these streams but you can't ask me as an individual to pay

these kinds of costs. If we are not prepared on modeling the streams, I as an individual am not prepared to pay these costs until you can prove we have got to pay them.

This is my comment. It is not a District comment, but this is exactly the way I feel. You have got to prove to me that this is going to accomplish something or I won't pay it.

Other than that, I think we favor a piloting of sludge disposal operation. I have no comment as to where it ought to be. I think Harrison County came about because there is a pipe line going through there, and it ended there, and the original concept was to have just an existing pipe line along an existing right of way. So it is a low capital cost operation. So this is the reason Harrison County -- these are the reasons why Harrison County comes up.

We favor piloting at small locations -- I am not sure that I would go along with the State idea of a hundred thousand people. I would favor a five or 10 thousand person community, two or three of them probably, for piloting. I am a little apprehensive about a hundred thousand people, but I think 10,000 would be a reasonable area to pilot.

I think that technically I would emphasize this is a technically valuable compendium of information and a

2 tremendous amount of work has gone into this, a tremendous
3 amount of study. It is something we have to do to meet
4 the 208 requirements. We may have done exactly the same
5 if we had done it ourselves, but that is the option in
6 the person who does the study that they can do it, investi-
7 gate it the way they want to.

8 I think they have looked at all of the possible
9 alternates. I think we have additional work to do, par-
10 ticularly in terms of justifying any storm water treatment.

11 Technically we may feel we have got to treat it
12 but we have got a long way to go before we justify the cost.

13 I think these are our basic comments, and we fully
14 intend to go through the appendices and provide information,
15 prepare written comments to the Corps, which comments will
16 be available to any of our constituents if they desire
17 copies of them.

18 COLONEL MOORE:

19 Thanks, Erwin. I have kind of lived for the last
20 nine months with George Watkins in my rear pocket, which is
21 as it should be.

22 I am surprised that you haven't gone through all
23 the compendium, Erwin. You have lived with it with me for
24 the last nine months. But take your time and digest it

2 because it is a lot of information.

3 The study was never indicated to require anybody to
4 meet Level 1 or Level 2 on either municipal or storm. It
5 only points out that if that is the way you want to go,
6 there it is, and there is the cost.

7 The costs are in the study as Erwin would like to see
8 them, not by thousands of gallons but by year on the thou-
9 sands of gallons that are projected. It is by year and
10 the capital costs are laid out as the plan unfolded and
11 as envisioned to unfold. So if you want to get into that
12 kind of detail, it is there.

13 I would highly recommend from the point of view
14 of local politics that that piece of the study might well
15 be worth-while to you because it does depict for you what
16 the increase in tax dollars are going to have to be to meet
17 such a thing, and if you are going to raise the issue,
18 and the one good aspect of the study I believe for the State
19 in confrontation with Federal EPA is just that. It says,
20 "Do you really mean the standard and, if you do, here is
21 what it costs."

22 There is no measure to a water quality standard for
23 the stream, and there needs to be one, and there was no
24 intent not to fund one, and I have made that statement

2 clearly and emphatically during these final public hearings
3 as well as earlier.

4 I fully agree with George Watkins in that regard.

5 I apologize to the nth degree that that was
6 reduced from the study. It was taken out of that study.

7 This is not a personal apology; it was taken out of the
8 study before I got there. I can assure you that, as far
9 as I am concerned, it should never have been because it
10 performs the very decided value of giving the base from
11 which you operate and tells you how far you need to go to
12 get whatever it is you want.

13 I can guarantee you that if I have anything to do
14 with the Lake Erie study, that that's essentially what
15 we will do in the Lake Erie study from the start because
16 I think it is needed.

17 I don't know that it would be any good to set a
18 stream quality standard for the lower Cuyahoga until such
19 time as I know what I want Lake Erie to be, and back off
20 from it until I can determine what it must be.

21 I have got to have a relationship between streams
22 and the final basins in which they flow and back off
23 from it.

24 So just the Cuyahoga River itself may not even

1 answer the question, a model of it.

2 We have contacted the contractors who did the study
3 for us, who do in fact have a basic model, and we are looking
4 toward this model for future reference.

5 So we do agree with that position. There is no
6 question about it.

7 Yes, sir.

8 DR. ELZAM:

9 Case Western Reserve about a year and a half ago
10 started a project with the Rockefeller Foundation money to
11 study the only approach to phosphorus pollution. So actually
12 we are studying that, and that's a joint project by many,
13 many departments, engineers, system officers, biologists,
14 ecologists, and what have you.
15

16 I would say to the Colonel it would be very, very
17 important to look at that. And, by the way, we had our
18 first yearly report that came out, so I would say get in
19 touch with the people at Case Western Reserve University
20 and get this particular information because certain univer-
21 sities did really start looking on a regional basis, you see.
22 You cannot just take the Cuyahoga River. You have to take
23 the region as a whole. We want to see what's in Lake Erie,
24 what we want to protect from, in order to be able to monitor
25

1
2 certain things.

3 But if I can have a minute of your time, I have here
4 something that distressed me very much in that "Well, let's
5 go out and ban phosphorus." We went through that already.

6 We did replace phosphorus with some other things which we
7 knew nothing about. Phosphorus we know exactly where it
8 belongs, what it does, and what we can do with it.

9 But, you see, when we go out and we ban something
10 and then the industry just goes out and they go into their
11 pockets and they pick up something which they know nothing
12 about, and they put it out for us to use -- okay? -- most
13 of the substitutes are carcinogenic. It happens that a kid
14 had died because of all this replacement. Would we like to
15 have that? Would I love to see something of this sort
16 happen?

17 Before we do anything of the s :t, we have to find
18 out, we have to do research in depth before we are going
19 to substitute anything, and I am saying that only because
20 I heard Samuel Epstein, which is a world authority on
21 environmental problems, and he came out and he literally
22 gave it to the Federal Government.

23 How could you go and ban phosphorus before you know
24 what to substitute for it? See, we really have to know how to

act on things before we do something which is irrational
and I feel that a phosphorus ban is irrational.

COLONEL MOORE:

Yes, sir.

MR. STIPLEY:

Might I respond to that, Colonel?

COLONEL MOORE:

Fine with me, sir.

MR. STIPLEY:

My only question in responding to this would be,
if I understand correctly, Sweden has banned phosphates
and this has been for some four years. Canada has banned
them for some two years. Certainly those two countries
must have exceptionally good data. They are still there.
They are still surviving, and the people are all living.

So I think it depends on whose engineers' reports
you read. I have a stack of reports from Witco Chemical
and a few doctors and scientists, and so forth. They have
a very good case saying it is good.

So it may be a moot point, not to argue with you as
an engineer.

COLONEL MOORE:

Thank you, sir.

I would only suggest, as far as your previous question was concerned, sir, which was that the cost that you see here for municipal waste includes the industrial aspect, in other words, of the effluent that they would put into it.

Now, as far as everybody paying for their share of the problems that they created, the study does intend that that be accomplished as far as practical. The problem with storm water, as Erwin so well pointed out, is that just to treat that is darn near half the cost of what you are seeing here. And it is massive and do we really have to do it? And if we do, to what level do we do it? Do we only have to remove the metals or certain other aspects of that, or do we have to run it all at Level 2. It is just massive. And how much?

The Chicago study is collecting darn near every drop of rainfall that occurs, and you can imagine what kind of cost that's got with it. But they have a different problem than the Cleveland area does, you see. We don't have to collect rural runoff. We didn't think that that was a massive enough problem in the Three Rivers Watershed area because there wasn't that much agricultural operation. So we didn't look at rural. We only looked at our urban

1
2 storm runoff.

3 So suppose you had to collect the urban runoff, too?
4 Where do you stop this monster?

5 Our study I believe does provide some of the
6 answers to that in light of cost and considerations of
7 what level do you want to meet.

8 I think it is important to your taxpayers to realize
9 that that's what we are talking about because you can in-
10 crease those that we showed you before.

11 Yes, sir.

12 MR. WILSON:

13 Howard Wilson, Land Water Use, Akron.

14 Maybe you did explain a little bit previously what
15 the objections of the North Central Ohio people were to the
16 land treatment. That is, did it contain some chemicals
17 and iron and other things which are going to run the land,
18 or was there some aesthetic ideas or what?

19 COLONEL MOORE:

20 Let me discuss the concerns of North Central.

21 Let me start the conversation over again.

22 Just turn to Slide No. 10. I will do it from this,
23 Jim, Slide No. 10.

24 MR. WILSON:

1
2 Plan C.
3

COLONEL MOORE:

He is trying to find a chart that lists the concerns,
sir. Maybe we ought to just forego it.

The first concern of the citizens has to do with
an institutional problem and that is, who is going to operate
the system? In short, the State? Who is going to operate
the system?

How do the people in North Central Ohio get assurance
that the effluent will flow through the tunnel or, if it is
raw sewage, the quantity that flows to the tunnel is going
to arrive there at the right time in the right quantity?

You know, it has got to arrive at the right place because
of the tunnel. That's a major concern.

The concern of the citizens in Cleveland ought to
be, if I sent it down there, are they going to accept it?
Or are they going to block the tunnel off one day because
they got too much rainfall? Are they going to shut the
system off.

Suppose the rainfall gets to the point where it
fills the basin in? All I am saying to you is that it is a
little facetious but they are concerned on both of those
controls, the input and output. One guy has got to provide

1 2 the input and the other guy has got to accept it.

3 4 The other concern is a very personal one. They
4 don't mind, it is kind of like yourself, sir, and yourself,
5 they don't mind taking care of their own problem; they
6 hate like hell taking care of somebody else's. And there
7 are other ways to do it.

8 9 And if there is that much social concern on those
two aspects alone, then why bother with it?

10 11 MR. WILSON:

12 13 But do they want chemicals?

14 15 COLONEL MOORE:

16 17 There are concerns about the hydrologic, the amount
of water we are taking out of the basin or put in that basin
18 would in fact cause flooding in the upper stream areas
and minor tributaries.

19 20 There are engineering solutions to those problems.

21 22 You can let the water go in a different place in the stream.
23 24 It will cost you a little more to take it and pipe it down
there.

25 26 You can build storage ponds in the upper basins
27 and store it for a while. So that if there is an unexpected
rainfall, and unexpected rainfalls do occur in that area
28 during June, July, and August, the height of the spring

2 season, and the height of the growing season, but we realize
3 there are those problems and we also readily admit that
4 they can be engineered. They do add costs.

5 In the case of ground water contamination, we
6 feel that that problem can be resolved with the ground
7 tile provided in the system, 119 looked at now by APWA,
8 the Public Works Association.

9 It appears that only six of them had a problem
10 and that problem might well have been resolved by tile.

11 So we think that problem is taken care of. We
12 aren't that concerned about the ground water contamination
13 problem but they are. And I can talk my you know black
14 and blue but until it is demonstrated that it won't be a
15 problem you can bet your bippy that they won't accept it.

16 Social? Transport of the effluent? What does
17 that mean? They just don't believe that tunnel will work.
18 Suppose it breaks down, what happens?

19 The only thing I can tell you is we would have to
20 take the raw sewage, if that's what is flowing in it,
21 and flow it out to a watershed and in this case probably
22 Lake Erie itself.

23 Is that any different than any other technology?

2 No. If the secondary treatment or final treatment
3 plant didn't work, we would have to flow it out somewhere,
4 too. The only problem is that it is only one. This contains
5 the outflow equal to 8. So it becomes then the matter of
6 quantity.

7 What I am doing now is giving you the very fair
8 appraisal as I gave them last night. Okay?

9 This study is not an attempt to hide anything; it
10 is an attempt to expose everything. That's really what
11 it was done for. That's why we have gotten along on it
12 because they wanted it exposed.

13 Large single irrigation area. We can design that
14 out. It was designed that way because we had the least cost
15 design which is why the plants are configured in the numbers.

16 What is the least cost to get this under any tech-
17 nology? The least cost configuration for land technology
18 is one massive site, and when you got to put the sewage
19 of two and a half million people in that one massive site,
20 it gets massive. And to drive it low which gets me --
21 well, I will get to that in a minute -- aerated lagoons,
22 will they stink? Yes, they will.

23 "Can you insure that they won't?"

24 "No, I can't."

1
2 I can assure you that Lake Erie won't get any higher
3 than it was. It was not supposed to get as high as it is.
4 I don't control it, contrary to popular belief.

5 ... Laughter ...

6 But I might say to you that if properly designed,
7 properly operated, and properly maintained and not over-
8 loaded, it should have a pretty high assurance and, being
9 a systems analyst, you know, you give me a probability of
10 .95 or so and I am willing to accept that risk, but in
11 order to provide some additional protection, we did provide
12 for forestation around those aerated lagoons such as you
13 would have a natural lagoon to block the smell, if it
14 occurred.

15 So that's kind of acceptable to them. Again,
16 though, you are talking to farmers, and farmers by their
17 very personality and psychology have never accepted anything
18 at face value before they had to grow up with it and it
19 was demonstrated it would work. Now, that takes you back
20 to demonstration projects like the gentleman asked for.

21 You can't build a land system for a million and
22 a half people or a hundred thousand people, you know,
23 without having them grow up with it. Which gets me to
24 the next three problems because I have taken care of the

1
2 heavy metal contamination: We are going to take it out
3 before it gets into the municipal systems because industry
4 is going to be required to buy our plan.

5 The application rate formation is tied closely
6 together and I refer back to the flooding of the streams
7 because if you can reduce the application rate, you in
8 fact reduce the flooding problem. Right? Because I don't
9 put as much water out there unless I put it in our larger
10 area which spreads it over the basin full.

11 To get cost effectiveness, the contractors that did
12 the land aspect for us put 75 inches ample annual additional
13 rainfall in a different form in that area. Since they had
14 43 inches last year, I have really forgotten the number,
15 it was about that, it was around 43 and the average for
16 the area is 47, and they told me last night they are
17 cut in bathing suits trying to get the tractors out.
18 And I am going to give them 75 inches more?

19 ... Laughter ...

20 And it rained every night I went out there to talk
21 to them about it.

22 ... Laughter ...

23 Needless to say, I wasn't very successful. You
24 know, and we joke about it, but you can understand through

1
2 the joking what their concerns really are.

3 Now, I can reduce, oddly enough, to \$8 million added
4 average annual cost to the total plan, I can reduce that
5 to eight or nine; I can reduce that application rate to
6 45 inches. I got to take twice as much land or so, or
7 1.6 times as much land. So I tie up more land or I would
8 build four plants in Cleveland and only take out four.

9 Now, that's not going to be too cost effective
10 because I got to build the same length of tunnel, and once
11 I mold that hole, I might as well mold it 16 feet as well
12 as mold it 12, because the added cost isn't that great.
13 I am already down there.

14 So those are the kinds of things. How does the
15 farmer live with this? He has got to give up some freedom.
16 I don't think he is going to run out there and plant his
17 seed while that sprinkler is going.

18 ... Laughter ...

19 At least until he gets accustomed to wearing the
20 water.

21 So you got those kinds of things to worry about.
22 Can the sanitary engineer and the farmer manage
23 the same land for two different reasons in compatibility
24 with each other, each sharing to provide a benefit, if you

1
2 will, to each other, because the farmer does get a benefit.
3 If nothing else, he gets his field-tile free, because the
4 guy supplying the sewage is going to pay for it.

5 Can they really live in coexistence? I don't know,
6 and I don't know of any data base you can find me that's
7 going to give me that answer. I only know of one thing
8 that's going to give me the answer, they have got to grow
9 up together in the system, and if they can grow up together
10 in the system, they can live together in the system. And
11 that's the only way I can describe it to you, sir. That
12 was the concern.

13 MR. WILSON:

14 That was very good.

15 COLONEL MOORE:

16 Thank you, sir.

17 Do we have any other questions?

18 Thank you very much for your kind attention, for
19 your comments, and if you have any you would like to add for
20 us in writing, please feel free to do so. We want them.

21 If you have any concerns about any of the aspects
22 of the plants, please send us those concerns.

23 Thank you very much.

24 - - -

OhioEPA

Exhibit 2

STATEMENT

by

DR. IRA L. WHITMAN, DIRECTOR

representing

The Ohio Environmental Protection Agency
The Ohio Department of Natural Resources

regarding the
Wastewater Management Study
For Cleveland-Akron and the
Three Rivers Watershed Areas

I appreciate the opportunity to comment on the Wastewater Management Study as it may affect the future of the resources and environmental quality of the State of Ohio. The Ohio Department of Natural Resources and the Ohio Environmental Protection Agency have cooperatively evaluated concepts proposed in this important report and my statement is intended to represent the joint conclusions of both Departments. ~~encourage Corps to investigate as many alternatives as possible, including total land disposal.~~

In viewing the wastewater study in its entirety, we feel it is an unusually useful and well prepared report. We will make immediate use of the information and conclusions presented during the perpetual updating and improvement of required basin and metropolitan water quality plans and in the formulation of sorely needed strip mine reclamation plans. Let me assure both the Corps and the Congress that this study will not be placed on the shelf and forgotten. The relevance and usefulness of the report was greatly enhanced by the truly outstanding efforts by Colonel Moore and his staff to work in a close and sincere partnership with counterpart planners in state government. We thank Colonel Moore for this dynamic relationship and urge that other Corps Districts and federal agencies emulate his example.

EXH. NO 2

Despite my enthusiasm, however, it should not be assumed that we feel that all the relevant water quality questions have been answered or that the Waste-water Management Plan can, in itself, be certified as a basin quality plan. This was beyond the intent or the funding capability of the Corps and we fully understand that fact.

In reviewing any wastewater management plan, and especially one of this magnitude and importance, the Ohio EPA must be constantly aware of the plan's relationship to Public Law 92-500, passed October 1972, and to our national problems of energy resources. This plan considers both of these factors in making its final recommendations. The policy of the State of Ohio is to pursue the goal of Public Law 92-500, that is the elimination of the discharge of pollutants to the navigable waters by 1985, by making optimum use of all the resources available to us and minimizing waste.

The plan proposes four alternative strategies for wastewater management and requests that the state make the final plan recommendation. This is consistent with water quality planning requirements of the Federal EPA, and with the desires of the state.

The State of Ohio will consider Alternates A₁, A₂ and B for recommendations after receiving comments from the public and consultations with the U. S. Environmental Protection Agency. At this time the State of Ohio will not consider Alternative C, that of the transport of wastewater for land treatment in North Central Ohio, as one of the viable alternatives, unless the public in the Three Rivers Watershed area and the North Central area requests the state to consider it among the alternatives.

We are all aware that the most widely discussed aspects of the Wastewater Management Study are its proposals for land disposal of treated sewage. There is nothing new, of course, in this concept. Spray disposal or broad irrigation of various industrial wastes has been practiced for many years in Ohio with reasonable success. After reviewing the Corps study, I believe I would have little hesitation in reviewing proposals for land disposal of adequately treated wastes from communities of less than 100,000 population in the same way I would review any other waste treatment plant design. (A community of 10~~0~~,000 would require less than 400 acres for land disposal of wastes.) Every plant design must pass rigid examination by Ohio EPA for effectiveness, cost, safety, and operability. It is true, however, that there is a significant difference between land disposal of industrial wastes on small fields owned by the industry and land disposal of sanitary wastes on larger land areas. We would be interested in seeing this concept utilized by one or more communities of less than 100,000 population both in the Sandusky Watershed and the Three Rivers Watershed. We would be particularly interested in innovative attempts to make positive economic utilization of the liquids being disposed of for improved agricultural returns. Special and detailed quality monitoring of the runoff, the soil, and the crops produced would be required. We are concerned about land disposal over large areas, where institutional and political problems would outweigh technical considerations. And, transfers of water from basin to basin need to be subjected to particularly harsh scrutiny - for hydrologic and social reasons alike.

Depositing sludge on land areas as a means of disposal is a generally worthwhile concept and this may be especially true for strip mined areas in Ohio where sludge may also aid in their restoration. The State of Ohio wishes to give support to proposals utilizing sludges for strip mined land reclamation and proposes that a first year trial of sludge disposal in Harrison County be pursued, based upon local acceptance.

STATE
The Ohio ~~EA~~ in consultation with interested parties will designate a committee including OEPA, DNR, City of Cleveland, Harrison County, Coshocton County, OSU and Case Western Reserve to study the transfer of Cleveland sludge to strip mined areas and submit these recommendations to the state within 60-90 days. *We* will ask the committee to study the proposal to transfer Cleveland's sludge by truck for one year to strip mined areas. OEPA will request U.S. EPA to prepare environmental assessments for this project.

As we view water quality and resource planning needs in Northern Ohio, I feel that a vital area has thus far been omitted: that is the potential impact on Lake Erie of these and other water management alternatives. There is an urgent need for a comprehensive Lake Erie water quality management plan. Lake Erie is the recipient of the runoff and the wastes and the sediments from one of the most complex urban, industrial and agricultural areas in the world, yet we possess only a very limited knowledge of the dynamics of this vast body of water. To meet this need, we urge that Section 108 of PL 92-500 be immediately funded in the full amount authorized and that the study be conducted by the U. S. Army Corps of Engineers in a realistic partnership with Canada and the States of Ohio, Michigan, Pennsylvania and New York. Ohio stands ready and eager to participate in this study.

In conclusion, I again wish to thank the Corps for this useful report. I would also urge members of the public and their governmental agencies at all levels to communicate with us regarding the foregoing concepts. If we are to meet the high environmental goals set by the public, we must work together to utilize every available scientific technique. We look forward to a long and continued working relationship between the people of Ohio and the outstanding staff of the Buffalo District Office of the Corps of Engineers.

1 DEPARTMENT OF THE ARMY
2 Buffalo District, Corps of Engineers
3 1776 Niagara Street.
4 Buffalo, New York, 14207

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PUBLIC MEETING
ON THE
WASTEW. " MANAGEMENT STUDY
FOR CLEVELAND-AKRON
METROPOLITAN THREE RIVERS
WATERSHED AREAS

Held at Presbyterian Church

Cadiz, Ohio
on
8 June 1973
at
7:30 p.m.

PRESENT:

COLONEL ROBERT L. MOORE, District Engineer, U. S. Army
Engineer District, Buffalo, NY 14207
ARTHUR WOLDORF, Ohio Department of Natural Resources,
Columbus, Ohio
MAAN OSMAN, Ohio Environmental Protection Agency,
Columbus, Ohio

1
2 DEPARTMENT OF THE ARMY
3 Buffalo District, Corps of Engineers
4 1776 Niagara Street
Buffalo, New York, 14207

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6 PUBLIC MEETING
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8 ON THE
9 WASTEWATER MANAGEMENT STUDY
10 FOR CLEVELAND-AKRON
11 METROPOLITAN THREE RIVERS
12 WATERSHED AREAS

13 Held at Presbyterian Church

14 Cadiz, Ohio
15 on
16 8 June 1973
17 at
18 1:30 p.m.

19 PRESENT:

20 HOWARD ADAMS, Cadiz, Ohio, Merchant.
21 AUDREY E. BALL, 347 St. Clair Avenue, Cadiz, Ohio, Housewife.
22 MRS. ROSS BICK, 156 Woodland Avenue,
Newspaper Correspondent.
23 HOWARD M. BENNINGTON, 443 Park Avenue, Cadiz, Ohio,
County Extension Agent, Agr.

- 1
2 RICHARD D. BETHEL, James Avenue, Cadiz, Ohio, Cadiz
3 Insurance Agency, owner, Community Market, Cadiz, Ohio,
owner.
4 LABAN BLACKBURN, Cadiz, Ohio, Co. Recorder.
5 DAVID BOVENIZER, Mt. Pleasant,
6 Newsman.
7 D. A. BOWER, 1319 3rd Street, N.W., New Philadelphia, Ohio,
Chief Engineer, Muskingum Conservancy District.
8 ROBERT CAMPBELL, 143 W. Market St. Cadiz, Ohio, Retired.
9 MYRTLE R. CARPENTER, Planning Commissioner, Health Depart-
10 ment.
11 ELMER L. CARSON, 404 Park Avenue,
Real Estate Broker.
12 MRS. RALPH D. DUNLAP, 205 Cunningham Avenue,
Housewife.
13 JAMES LEO ELBERT, 4311 Noble Street, Bellaire, Ohio,
Belmont County, Sanitation Director.
14 JOY FITZGERALD, 65 S. Front Street, Columbus, Ohio,
Adm. of Mined Land
15 E. R. GROVES, Route 5,
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16 THOMAS A. GROVE, 511 Dewey Avenue, Cadiz, Ohio, Civil
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17 FLOYD H. LAMB, SR., R.I. BX 9643907, Cadiz, Ohio, self
employed drilling contractor - water wells.
18 MARJORIE LANOV, Harrisville, Ohio, Shortcreek Township
Trustee.
19 PAULINE B. MARPLES, Harrisville, Ohio, 43974, Housewife.
20 GARY A. MATHE, 759 E. Market Street, Cadiz, Ohio, Soil
Conservationist.

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26070, Chemist Tidd Plant, Brilliant, Ohio.

PAUL J. McCULLOUGH, R.D. #1,
Supt. of Water and Sewers.

MRS. D. C. McMATH, Freeport, Ohio, Teacher.

JOHN W. MENTZ, 6515 E. Livingston Avenue, Columbus, Ohio,
Geologist, Skelly & Loy.

TUNNEN T. MILLS, 426 Park Avenue, Cadiz, Ohio, Planning
Commissioner.

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Soil Conservation Service, District Conservationist.

BENNIE NETZER, Crops of Engineers, U.S. Army, Penna.,
Environmental Advisor to Col. Delbridge.

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Florida, Retired.

JOHN B. NORVELL, 1938 Commons Road, No., Columbus, Ohio,
Myself.

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and Reclaimer.

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NATELY RONSHEIM, 4171 Oakwood Drive, Cadiz, Ohio.

VICTOR ROWLAND, Cadiz, Ohio, Lawyer and Ex Judge.

GABE ROZSA, Route #2, Steubenville, Ohio, U.S.P.A. S.C.S.

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2 UWE. SEELE, 65 S. Front Street, Room 808,
3 Chemist.

4 W. B. SELEY, Box 66, Cambridge, Ohio 43725,

5 ALAN SIMPSON, R. R. #1, Cadiz, Ohio, Sanitarian.

6 DWAIN SMITH, 239 N. Main Street,
County Commissioner.

7 PAUL SUTTON, Olive Street, Caldwell, Ohio 43724, Research
8 (OARDC) Professor.

9 MRS. GRANT THAXTON, Harrisville, Ohio, Housewife.

10 LEWIS R. THOMAS, 709 Peppard Avenue, Cadiz, Ohio, U.P.
Church of Cadiz.

11 BOYD WALLACE, R. D. #4 Cadiz, Ohio, Farmer.

12 GEORGE H. WATKINS, 621 Superior Bldg., Cleveland, Ohio,
13 Secretary-Treasurer Three Rivers Watershed District.

14 ART WOLDORF, Columbus, Ohio, Administrator for Ohio
Department of Natural Resources.

15 M.S. WORTH, Lafferty, Ohio, President Oliver Coal.

16

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INDEX OF SPEAKERS

	<u>NAME</u>	<u>ORGANIZATION</u>
4	Colonel Robert Moore	Corps of Engineers
5	Arthur Woldorf	Department of Natural Resources
7	Thomas Grove	Civil Engineer
8	Floyd H. Lamb, Sr.	Self-employed drilling contractor - water wells
9	Mrs. D.C. McMath	Teacher
10	Dr. Jim Speakman	P.H.D. in Sanitary Engineering
12	John Norvell	Civil Engineer
13	Boyd Wallace	Farmer
14	Naan Osman	Agricultural Engineer
15	Jay Fitzgerald	Administrator of Mined Land
16	Dr. Paul Sutton	Agricultural Research Department Center.
18		
19		
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21		
22		
23		
24		

PROCEEDINGS

COLONEL MOORE:

Ladies and gentlemen, it is a pleasure to return to Cadiz, Ohio. I made one previous visit, as you know, to describe this planning effort that we're doing for the State of Ohio and the initial process when we were looking at twelve alternatives. I am back this time to finalize the public review the final four alternatives that the Corps suggested and the State recommended to be carried to further planning.

Since the Corps does, in fact, in this instance act as a planning agency for the State, we are making conclusions, but no recommendations. Any recommendations to be made will be made by the State of Ohio.

We feel this has been a very good cooperative effort between the two of us, the State and the Federal Government, in this case with the Federal Government acting for the State as a planning agency. I want to express my appreciation for that.

I also want to express my appreciation for the State of Ohio co-hearing the final public meetings. In that regard I have Mr. Arthur Woldorf from the State Department of Natural Resources to my immediate left, and I believe he

1
2
3 will be making a State position known to you today. To
4 his immediate left is Mr. Maan Osman from the Ohio
5 Environmental Protection Agency. They currently have been
6 the cooperative elements of the State Government in this
7 planning exercise.

8
9 As I stated to you, I believe when I was down here
10 before, in my view the execution of such a thing as Waste-
11 water Management must be a local and state thing and not
12 a federal thing. Unless the locals and state want it,
13 it ought not to be done, if there is some other engineering
14 way to go about it. What this has done is look at alter-
15 natives so that we can arrange a set of alternatives, all of
16 which are engineeringly feasible, and if publicly acceptable
17 and cost effective, are all there and ready to be executed
18 if somebody wants to execute them.

19
20 Now, we detailed for you the several steps we would
21 follow in the development of this study. It is shown on
22 this slide. If you recall, we were at about step three the
23 last time I was here and working somewhat on the latter
24 steps. We were just about finished with the study effort.
25 Now, we'll turn the final in the first of August. There are
26 three factors remaining, and they are shown on this chart.
27 For the final public involvement, we just had meetings

1
2 throughout the basin. We had one in the north central area,
3 and we have had one now in Cadiz, Ohio. We need your
4 comments back on the acceptability or non-acceptability of
5 any of the plans, and this is what this is all about. The
6 Ohio State University is currently examining the agricultural
7 aspects of the land application, and their findings will
8 have an impact or already have had an impact on our
9 conclusions.

10 The State of Ohio must have these two previous inputs
11 prior to their making their final recommendations and
12 conclusions.

13 Now, I would like to go from there and discuss the
14 final four plans if I may skip over the twelve alternatives
15 because I know your main interest is in sub-sets of the
16 aspects of these plans.

17 Our evaluations of these plans were made in
18 consideration of engineering costs, environmental, social,
19 and institutional as well as public acceptance, and you
20 must realize this is a preliminary report subject to
21 change with input from these final public hearings and the
22 OSU study report and state evaluation and the recommendation
23 as well as the comments of our federal agencies as the
24 study proceeds up that chain for review.

I might also add we have received many, many public inputs on acceptability and on non-acceptability of all aspects of the planning process. We have incorporated those in our planning documents and they will be an integral part of the study as it is forwarded. These final plans are developed to conform with the aspects shown on this slide, the first being the desires of the State of Ohio with respect to the stream quality and the impact built with ongoing efforts from the Northeast Ohio plan from which this was developed. I might add with respect to stream water quality standards, the one thing missing in this study is the model to determine what effect on stream quality at the different levels or criteria would have, and we don't intend to leave that. We talked about it to the State about this and George Watkins has been the biggest pusher of this in the Three Rivers Watershed District, and he is absolutely correct in doing it. We do need to know just how far we need to go to treat the wastewater in order to keep the stream quality at a level that we want. So that kind of modeling needs to be done in monitoring. We had to meet the goals established by the Water Pollution Control Act of 1972, and these plans are structured to do that. There are goals, and the time things were established in that law.

1
2 and we are trying and attempting to meet those goals.
3

4 There is a ^{agreement} 1972 water quality between Canada and the
5 United States, and the guidance from the Office of the
6 Chief of Engineers. Now, prior to the developments of the
7 specific details of the four wastewater plan options, there
8 were evaluated for industrial wastewater treatment, urban
9 storm water treatment, and sludge management. I won't go
10 into any of these except sludge management. I would only
11 say before I get to that that industrial wastewater manage-
12 ment we are in our planning efforts, because of the
13 concerns of what heavy metal content in the effluent might
14 do to the soils or the water which does require or does
15 suggest and conclude to the State that industry be required
16 to remove that heavy metal content prior to allowing any
17 of its waste to flow into the municipal system, and that
18 is costed in the plant.

19 Now, with reference to sludge , from an environmental
20 point of view, as I discussed with you when I was down here
21 last, the application to sludge to strip-mined lands for
22 restoration and revegetation was established as a favorite
23 option. This option provides for recycling organics and
24 nutrients extracted from wastewater to restore land areas
otherwise left barren, some of which do produce acid

drainage that pollutes other waterways. The sludge does undergo treatment prior to its transport to the area of application, and this process of treatment is a digestive one to eliminate bacteria. A secondary priority was given to that application of that sludge to local agricultural lands, because of the recycle of the organics or nutrients again. Incineration was reserved as the last choice to be avoided wherever possible. That puts a contaminant elsewhere that we can't right now get rid of either. And the cost comparison of the three options demonstrates the same relationships. Incineration is the most expensive option, the cost per ton being that of 1.6 times of that of the other two options. Agricultural land applications are a little bit cheaper than sludge applications to the strip mined areas, only because of the immediate proximity of the agricultural area to the land system itself. This is particularly true where any proposal takes the effluent or raw sewage out to the north central area of Ohio.

Now, the response thusfar and particularly in this county has been favorable to this approach of sludge with reference to the strip mined areas.

If there is any public concern or public non-acceptance of that alternative, it certainly should be stated loud and

1
2 clear, because that's what this public meeting and public
3 involvement is all about. There are other areas possibly in
4 worse states of affairs than the strip mines of this area
5 in this county. You do have some limestone within that,
6 and that helps. There are some other areas within the
7 State that don't have that, and they want that also. Now,
8 the final four plans. With respect to plan A level I, it
9 duplicates the geographic layout of the treatment facilities
10 in the Three Rivers Watershed of the Northeast Ohio plan.
11 We have just taken that plan and this plan and brought it
12 up to level one.

13 The level two plan is the same as the geographical
14 layout as the level I plan. It just treats it to a higher
15 standard. The cost is quite a bit more for the level II
16 treatment than for Level I.

17 Now, plan B combines the technologies of advanced
18 biological physical - chemical and land treatment to
19 achieve the Level II criteria. In a significant aspect of
20 this plan is that in both levels of plan A, all features
21 are within the Three Rivers Watershed area. These three
22 plans, ladies and gentlemen, are the three plans that would
23 have within their makeup a pipeline if that alternative is
24 the one that the State and local communities decide upon and

would have a pipeline that would eventually bring this sludge to this area for restoration of strip mine areas.

Plan C, which is the next plan, would not have that in the final analysis because it is too expensive to bring that plan from the north central area of Ohio. However, plan C is unacceptable publicly in the north central area of Ohio, and, therefore, we conclude to the State it is unacceptable.

That's since the cost between plan C and other plans is almost equal.

Now, to facilitate public evaluation of the alternatives in your hand-outs today, you have impact tables and preference sets which you can read if you desire, and they do lead you to conclusions on the alternative plans. And their impact upon the public. I am not going to discuss those, and I am also not going to go into the conclusions, because you do have those also that we have made thus far. I would suggest to you that the conclusions have changed to the point that one has to be added, and that is to the conclusion that north central Ohio will not accept the Cleveland waste on their land. I must say though that north central Ohio farmers are not opposed to the treatment of their own waste by land application on their own lands.

1
2 Their opposition to Cleveland is not just to Cleveland. It
3 is an opposition to bring anybody's waste onto their land
4 for land application.

5 The cost of the plans in all their entirety are
6 shown on this chart. These are the three plans, and you
7 can see by this chart that the cost between plan A-I and
8 A-II will give you differentials in cost, and you can see
9 that plan A-II falls logically out of plan A. It is just
10 built on to plan A from 1980 on. Up to 1980 the cost of
11 those two plans remains equal.

12 Plan B does provide a cost savings, and plan B can
13 be implemented with the advanced biological physical-chemical
14 aspects of that plan at level I only and still retain the
15 upland areas of land treatment. Land treatment in those
16 areas, since the land sites are close by, seems to be just
17 as cost saving as going to level I by advanced biological,
18 physical-chemical. So, that might be an option that some-
19 one may choose depending if the decision is ever made
20 whether you need to go from Level I onto Level II or
21 whether Level I is sufficient. That decision has not been
22 made. I might add at this point in time that Level II has
23 not been even defined as far as criteria is concerned, and
24 the Corps of Engineers in this study defines a Level II

1
2 criteria themselves in order to do the study based upon the
3 best knowledge we had and the goals stated in the Clean
4 Water Act amendments to reach a certain level, which was
5 defined as no direct charge of critical constituents.

6 Now, we have addressed all the concerns on Plan C to
7 north central Ohio. As I told you, they have refused it.
8 This is the decision process that they take, and it shows
9 the flexibility of the planning as we provided it to the
10 State, and it shows that you can decide on any plan in
11 1975. You must decide on one of the plans in 1975. If you
12 decide on plan A, you go to any other plan in 1980. If you
13 decide on plan B, you forego the capacity to go back to
14 plan A-I or plan A-II, and you must go to plan B or C. If
15 you decide on plan C, it is final. That's in 1975, so that's
16 all this chart shows. It is provided by the State. It
17 also shows there is a cost differential. The longer you
18 wait to decide on these specific plans, the longer you put
19 it off and the more cost you pay.

20 We'll go on from there and discuss now just the strip
21 mine specification. I finished four plans and what I
22 would provide to any other public. I think I should
23 concentrate once again and renew our acquaintance with the
 strip mine application. That calls for the treated sludge

which has been called soil tone.

The reason for that is you do treat it for the bacterial process, the digestive process to take out the bacteria and transport it to some area with strip mines and place it upon the strip mine land in applications depending upon the design up to two inches. You would do that about three times during the year to get a six inch application, and you only have to apply it for one year. Then let it take care of itself.

Now, you would have to seal off the land. In other words, if there are holes left in the land or what have you, those would have to be sealed. You would not want those to drain right away into the land, so all that has to be done. We do have some experiments along this. I did show one last time, and I will repeat it if I may. This is the Penn State University experiment, and they are filling boxes with the strip mine materials. Then you can see that is rather poor strip mined material at best, even for strip mined material.

They did, in fact, plant bushes and shrubs and spray seeds into this box. They did, in fact, treat it. They first allowed actual rainfall to occur to see what that would do with the growth, and you may not be able to

1
2 see the growth. That's because it is dying off. But that's
3 just with the natural rainfall application. Then they went
4 and sprayed two inches of effluent. I believe it was 12
5 inches for the year. In addition to the natural rainfall,
6 and this is the growth they obtained, you can see that it is
7 a sizeable change in the capacity of that soil to produce
8 that in a short period of time.

9 Now, there are several plots up near Akron which have
10 been watched over since 1966 when the sludge was applied and
11 monitorings made of those and measured the acidity content,
12 the phosphorous content, and other things. Those statistics
13 are available. If you go look at those lands today, there
14 is a tree crop, grass crop growth on them. That's why I
15 said to you the last time I was here that I believed that
16 you could restore that strip mine area to graze cattle on it
17 productively and in a very short period of time. I said
18 then 15 or 20 years. I would be inclined to believe it
19 would be much earlier than that from what I have seen out
20 of the other two experimentations. Is that it, Jim?

21 I would like to end the formal discussion and turn
22 the podium over to Mr. Art Woldorf for his discussion from
23 the State.

24 MR. ARTHUR WOLDORF:

Thank you, Colonel. I am Arthur Woldorf with the

1
2 Department of Natural Resources. My statement represents
3 a joint statement by the Department of Natural Resources
4 and the Ohio Environmental Protection Agency.
5

6 I would like to give my own statement, because I
7 am back in my home country. I grew up in Bloomville in
8 Jefferson County. For the moment, I speak for the departments.
9

10 I do appreciate the opportunity, and in this I am
11 speaking as Dr. Whitman, officially representing him, I
12 appreciate the opportunity to comment on the wastewater
13 management study as it may effect the future of the restora-
14 tions and environmental quality of the State of Ohio.
15

16 The Ohio Department of Natural Resources and the
17 Ohio Environmental Protection Agency have cooperatively
18 evaluated concepts proposed in this important report, and
19 my statement is intended to jointly represent the conclusions
20 of both departments.
21

22 In viewing the wastewater study in its entirety,
23 we feel it is an unusual useful and well prepared report.
24 We will make immediate use of the information and con-
25 clusions presented during the perpetual updating and
26 improvement of required basin and metropolitan water quality
27 plants and in the formalization of sorely needed strip
28 mine reclamation plants. They will be developed in
29

cooperation with those of you who are here.

Let me assure both the Corps and the Congress that this study will not be placed on the shelf and forgotten. The relevance and usefulness of the report was greatly enhanced by the truly outstanding records by Colonel Moore and his staff to work in a close and sincere partnership with counterpart plants and state governments. We thank Colonel Moore for this dynamic relationship and would wish that other court districts and federal agencies might eminate this good example.

Despite my enthusiasm, however, it should not be assumed that we feel that all the relevant water quality questions have been answered or that the wastewater management plant can, in itself, be certified as a basin quality plan. This was beyond the intent or the funding capability of the Corps, and we fully understand that fact.

In reviewing any wastewater management plan, and especially one of this magnitude and importance, the Ohio EPA particularly must be constantly aware of the plan's relationship to Public Law 92-500 passed last year, and that was the amendment to the Water Quality Act and also to our national problems of emergency resources. This plan considers both of these factors in making its recommendations.

The policy of the State of Ohio is to pursue the goal of Public Law 92-500 requiring essentially no effluent standards, that is, the elimination of the discharge of pollutants to the navigable waters by 1985 and by making optimum use of all the resources available to us and minimizing wastes.

The plant poses four alternative studies for wastewater management and requests that the State make the final plan recommendation. This is consistent with water quality planning requirements of the Federal EPA and with the desires in the State of Ohio.

The State will consider alternatives A-I, A-II and B for recommendations after receiving comments from the public and consultations with the United States Environmental Protection Agency. At this time the State of Ohio will not consider alternative C; that of the transport of wastewater for land treatment in north central Ohio as one of the viable alternatives unless the public in the Three Rivers Watershed Area, that's the Cuyahoga area basically, and the north central area would both jointly request the State to consider it among the alternatives.

We are all aware that the most widely discussed aspects of the wastewater management study are its proposals

for land disposal of treated sewage. I might add here
that I am not sure that all of us are clear between treated
sewage and sludge. I might ask that Colonel Moore make
sure that we do understand that if there is a question.
Maybe I am the only dumb one. I always have trouble.

There is nothing new about the concept of disposing
treated liquid sewage on land. Spray disposal, which is just
a broad irrigation of varicus kinds of industrial wastes,
has been practices for many years in Ohio with reasonable
success, especially up in the flatlands of northwest Ohio
where it has been used.

After reviewing the Corps' study, I believe I would
have little hesitation in reviewing proposals for disposal
of adequately treated wastes from communities of less than
100,000 population in the same way I would review any other
waste treatment plant designs. I might say parathentically
that a community of 10,000 people would require in the area
of 400 acres of land for land disposal of wastes. It seems
like a reasonable size here.

Every plant design, of course, must have ridgid
examination by the Ohio Environmental Protection Agency
for effectiveness, cost, safety and operability. It is
true, however, that there is a significant difference between

1
2 land disposal of industrial wastes on small fields owned
3 by the industry and land disposal of sanitary wastes on
4 larger land areas.

5 We would be interested in seeing this sort of
6 concept utilized by one or more communities both in the
7 Sandusky Watershed and Three Rivers Watershed. We would be
8 particularly interested in innovative attempts to make
9 positive economic utilization of the liquids being disposed
10 of for improved agriculture returns. If this will help
11 farmers, then we're going to really get interested. If it
12 won't help, then that's something else.

13 Special and detailed quality monitoring of the run
14 off, the soil and the crops produced would be required.

15 We are concerned about land disposal over large
16 areas, where institutional and political problems would
17 out weigh technical considerations. And, transfers of
18 water from basin to basin need to be subjected to particularly
19 harsh scrutiny for hydrologic and social reasons alike.

20 Depositing sludge on land areas as a means of
21 disposal is a generally worthwhile concept, and this may
22 be especially true for strip mined areas in Ohio where
23 sludge may also aid in the restoration. The State of Ohio
wishes to give support to proposals utilizing sludges for

strip mined land reclamation and proposals that a first year trial of sludge disposal in Harrison County be pursued, based upon local acceptance.

The Ohio EPA in consultation with interested parties will designate a committee including OEPA and Department of Natural Resources, the Cleveland Regional Sewer District, Harrison County representatives, Coshocton County, Ohio State and Case Western Reserve Universities to study the transfer of Cleveland sludge to strip mined areas and submit these representations to the state within 60 to 90 days. I will ask the committee to study the proposal to transfer Cleveland's sludge by truck for one year to strip mined areas. OEPA will request E.S. EPA to prepare environmental assessments for this project.

As we view water quality and restoration planning needs in northern Ohio, I feel that a vital area has thusfar been omitted: That is, the potential impact on Lake Erie of these and other water management alternatives. There is an urgent need for a comprehensive Lake Erie water quality management plant. Lake Erie is the recipient of the run off and the wastes and sediments from one of the most complex urban industrial and agricultural areas in the world, yet, we possess only a very limited knowledge of the dynamics of this vast body of water. To meet this need,

we urge that Section 108 of Public Law 92-500 be immediately funded in the full amount authorized and that the study be conducted by the U. S. Army Corps of Engineers in a realistic partnership with Canada and the States of Ohio, Michigan, Pennsylvania and New York. Ohio stands ready and eager to participate in such a study.

What we're saying there is that there is a clause in a recent bit of legislation passed which authorized \$5,000,000 for the study of Lake Erie and coming up with a real management plan for it. We're supporting that concept and hoping for funding of it. There is no money for it now.

In conclusion, I again wish to thank the Corps for this useful report. I would also urge members of the public and their governmental agencies at all levels to communicate with us regarding the foregoing concepts. If we are to meet the high environmental goals set by the public, we must work together to utilize every available scientific technique.

We look forward to a long and continued working relationship between the people of Ohio ar . the outstanding staff of the Buffalo District Office and the Corps of Engineers. Thank you.

1
2 COLONEL MOORE:

3
4 Thank you, Art. We do have representatives from
5 the Huntington District. There is Mr. Bill Dawson in the
6 back, who was with me at the last meeting, and our
7 representatives from the Pittsburgh District with us today.

8 We are kind of out of our bailiwick here and are
9 down only because you became an adjunct to one of our plans.
10 We have got the area that creates it, and you have an area
11 that can possibly use it. That's why we're down here. We
12 normally go into a final public meeting, and this is a final
13 public meeting for the Corps. We only go by giving our
14 formal public statements, and then we call upon the public
15 for their statements and then open to a question and answer
period if you desire.

16 So, with that I will go ahead and call upon those who
17 desire to speak.

18 Mr. Thomas Grove, Civil Engineer. I guess professional
19 engineer in Ohio. You may take the microphone here if you
would.

20 Mr. THOMAS GROVE:

21 I have been interested in this ever since I was
22 County Engineer and a member of the Planning Commission and
23 the Executive Secretary of the Planning Commission after
being County Engineer. I am primarily interested in, of

1 course, the sludge application within our own locality.

2 I had the opportunity of seeing the application at
3 St. Mary's, Pennsylvania, and I think it has quite an
4 application and a useful one to the restoration of spoil
5 from strip mines as well as for the worn out soils that are
6 quite prevalent in southeastern Ohio. Sir, that is all. I
7 just wanted to add my word if it had any weight to it.

8
9 COLONEL MOORE:

10 Thank you very much, sir. I appreciate it.

11 Mr. Floyd H. Lamb, Sr., self-employed drilling
12 contractor, water wells.

13 MR. FLOYD H. LAMB, SR.:

14 I want to thank you for the opportunity to present
15 the other side of that, and I enjoyed all the reports. I
16 have read the articles and about 32 pounds of literature
17 that the Engineering Corps has put in our library.

18 I spent about four hours and a half there one day
19 and run across some very important things. I have been
20 a well driller in this county for about -- well, since 1924.
21 I am very interested in the water preservation of this
22 county of our undergrowth water strata. The first thing
23 is that this is entirely different from anywhere else.
24 This is Harrison County, and it is not St. Mary's, Pennsyl-

vania. All over the State of Ohio for the last 15 or 20 years, we have had test holes drilled by gas and oil companies. They went down 30 to 70 feet, and many of these holes were never plugged. They were left wide open. Right today in Harrison County we have test holes into the deep mines from anywhere from 600 feet on down to 400 feet.

Many of these holes are not plugged today. I could take you to one in 15 minutes where there is a sandstone on it.

This surface water gets down into our water strata and ruins our water strata. Now, there is an underground river -- I believe you geologists in the Engineer Corps know this that the river runs from northern Ohio -- I guess we don't have a map up here now, but it runs from northwest Ohio to southeast Ohio, and it gets 15 to 20 feet to the mile. Our water strata runs the same way. If we get our water polluted here in Harrison County, this is not a local issue, it could go clear to the Ohio River.

Now, with all these test holes over the State of Ohio, I find our natural kilder is destroyed. It is not like a place that has not had test holes. So, the thing I am concerned about if they put this liquid sewage on here or sludge on here, it is going to get down into the water strata. It is going to ruin the drinking water. The run

1
2 off in the winter time will go into our three recreational
3 lakes. I wonder if it is worth it all by the time it is
4 all said and done.
5

6 I read an article here recently from my well
7 driller's magazine, Johnson Drillers, Journal, and this
8 was in the December issue.
9

10 "Indiana Agency says sewage disposal threatens
11 ground water knowing that could endanger ground water
12 supplies.
13

14 A proposal to use thousands of acres of northwest
15 Indiana farm land as a storage and treatment area for
16 sewage and industrial waste from Chicago was opposed by the
17 Indiana State Stream Pollution Board. This plan is of
18 several long range proposals being considered by the U.S.
19 Corps of Engineers to dispose of Chicago area sewage.
20

21 William B. Christian said his plan would have to
22 be approved by Congress, but it would have an effect on
23 ground water. Their plan is this:
24

25 Under this plan, sewage would be aerated digressed
26 in the lagoons, which in a liquid portion of ways would
27 still contain valuable nutrients that could be used as
28 fertilizer. The liquid would be pumped after chemical
29 treatment to the sprinkler irrigation system. The Corps

of Engineers claims that crops and other vegetation would utilize the phosphates and nitrates in the wastewater. Any other harmful material would filter out of the water which percolates below the roof of its own filter."

Now, they have a natural filter there. Ours is gone. It is a regular honeycomb all over the State of Ohio. We have certain portions of this area that we can still get good water, but within a half mile of the strip mine, you will pick up acid water, at least 70 feet down. Our wells go twice as deep now. Then under the strip mines when they shoot their blastings, the rock strata under the strip mine is cracked and in my opinion if this is put on the strip mine area or in the pits, it is going to soak down and eventually get in the ground water.

As our Water Board Superintendent here in the County said it may do irreparable damage and may take ten years to get it. Out in the Tappan area, they have had septic tanks that they thought put out pure water. It took six years for them to realize that it wasn't coming out pure. It was getting into their water and ruining their water out there.

Now, we had a well in Harrison County that was 354 gallons a minute, and it was walled by acid water which

caused the county to go cut and build a lake.

3 Here is a little article from up in Willard, Ohio.

4 "Willard area farmers and land owners don't think
5 much of the Army Corps of Engineers' plan to fertilize
6 their crops."

Anyway, it says, "The number of farmers as well as some political leaders were brought together Monday night by the Willard Rotary Club," and here was their opposition.

10 "Some areas for such a plan would be found within
11 the Cleveland and Akron vicinity for piping this waste.
12 They want them to leave it up there if they can. Both the
13 state and the federal governments tend to forget about
14 rural people and their wishes."

15 I don't believe that. I believe that the state and
16 the federal government are doing al' they can to help us.
17 I believe that. I believe that we're working together,
18 and that's what we're here for today to get both sides.

19 "The objectionable odors and air pollution could
result from the storage basins and spraying."

I am not going to read anymore. I have a whole
list of stuff here that Brother Ronsheim helped me get.
He said I should go to the library and get some truths.
I found a lot that the Engineering Corps put out, and I did

1
2 find that Akron, Massillon, Canton, Mansfield, Norwalk,
3 Tiffin and the Columbian District had turned down portions
4 of this plan that they have today. Some of them turned
5 down all of it. So, I thought I was all alone and began to
6 think maybe I was wrong until I began to look into this.
7 I believe through your meeting today we will get a deeper
8 look into it. Right now as to land waste up at Garfield
9 Heights, Cleveland just about two weeks ago they had a
10 trial period. The police received one hundred calls in the
11 last year where the odors from this dump were getting in
12 their schools and parents made complaints about it. The
13 rats were running out some of the nearby residents, and
14 it had polluted their underground water. I just wonder
15 how many people we have here, just for the record, that
16 are from Harrison County.

17 (Counts show of hands.)

18 I act 24. Well, that's part of a representation of
19 the county.

20 I don't think I have anything else right now. I
21 just wonder if any of you men have any questions you want to
22 ask a dumb old well driller as to anything that happened
23 here that might help.

24 COLONEL MOORE:

I don't right now, sir, and I don't intend to respond.

1
2 to yours right now until after I have gone through the
3 rest of the people and you and I can have a discourse if
4 that's what it takes. I will be happy to do so.

5 I would like to call on Mrs. D. C. McMath of
6 Freeport, a teacher.

7 MRS. D. C. McMATH:

8 I just wanted to know if they are not going to level
9 the lands, where is it going to do much good?

10 COLONEL MOORE:

11 Then maybe I better get into a question and answer
12 period. Let me first answer your question, because it has
13 a little bit to do with his question.

14 There has been opposition to land treatment.
15 Mr. Woldorf stood up and said that I ought to discuss the
16 difference between the treatment application of the
17 wastewater itself, the effluent, the liquid sewage vis a vis
18 the treatment application of the fertilizer, the sludge
19 and the total solid material that's extracted in the early
20 processes. There is a difference.

21 There was never any intent in Willard or any county
22 you mentioned, sir, to place sludge on the ground. There
23 never has been. The thing those people are speaking of is
24 taking -- you can put my ten concerns chart up -- some people

1
2 get the idea that we aren't concerned, and I would just
3 like to express that we are. For that reason, in fact, we
4 didn't believe our contractor that we had designed the
5 system, and then hired Ohio State University Agricultural
6 Extension Department to do a resurvey and reanalysis of
7 the agricultural aspects of this study. They are awaiting
8 the report. That study was paid for by the Buffalo District
9 in relationship to this study to assure ourselves, the
10 State of Ohio and the local communities and the farmers that
11 we did, in fact, not intend to go out with any of these
12 proposals unless we could prove them sound and justified.

13 Now, the reason the Willard paper appeared, and I
14 presented these ten proposals, and I presented them in
15 great detail in Willard, and I told them I was going to
16 present them to them just like I'm going to present them
17 to you today. If they have any concerns or don't want to,
18 there are other engineering solutions and places that could
19 use the stuff. Therefore, we need not go against the public
20 attitudes, public concerns or public anything. It is
21 your system, it is your environment. How you go about
22 cleaning it up, you have got to pay for it. You have got
23 to be in a decision process. I think I stated that through-
24 out this study. I intend to today, and I have worked with

the State that way because of that and I fully believe in it. It is not my project. It is not going to be my project. I did a series of engineering evaluations of all possible alternatives, that I could think of and took the best pieces of those alternatives and put together as a set of plans. They still have problems. Problems not only with land treatment.

Problems are also in any technology, sir, you can think of treated by conventional means or by land. There are as many questions if not more on advanced biological chemical-physical unanswered today than there is on land technology. And if those don't work properly, the pollution continues to go into the stream regardless whether it goes to the land first or not. I just thought I would pass that comment along.

Now, let's go to the rest of it. The concerns of the north central area are not land treatment. It is against the design proposed in the Plan C that I have provided to you. Before it was in four plans, because we had it in four different plans, trying to achieve the best relationships. Let's discuss them, and the first two are the most important ones in my view. Most of the others can be handled from an engineering or agricultural

1
2 management point of view, and I will discuss them and
3 tell you about them.

4 This has to do with liquid sewage, not sludge
5 treatment. Okay? There is a difference. There is no
6 sludge treatment proposed necessarily, except the
7 agricultural land application of the dried material that
8 we are just going to put in a wet mass and bring out here
9 rather than a dry mass supplied on the ground.

10 By the way, Milwaukee bags and sells that stuff
11 today to the farmers. In fact, the farmers in the area who
12 are concerned right here are buying it, and it is called
13 milorganite. They are applying it to their farms today.
14 It is dried ground up sludge. It has gone through no
15 more treatment than the sludge we propose to bring out
16 here in the wet state. Okay? I just wanted that under-
17 stood today before I started.

18 Now, it concerns the institution who is going to
19 own the land. If you buy it, you are removing in the least
20 cost option of that plan, which is the way it was
21 configured in one of the concerns, that's putting the
22 whole package in one foul swoop, which is kind of hard
23 to swallow when it is 183,000 acres. Now, you take 183,000
24 acres off the tax rolls, you are taking a considerable

size or amount of land off the tax rolls. It is a lot of money and a lot of school districts will depend upon that money. A lot of educations of young children depend upon that money. That's a big concern, and I can't fight that concern, nor would I. But it is not necessary to buy that land. There is no reason in my mind given the time to work it out that the agricultural manager and the sanitary manager can't manage the same piece of land together and both gain a benefit from it. That's the whole purpose of the land technology application.

If that can't work forget it. There are other ways to treat the sewage. It is just that simple.

Now, let's go on from this point. The operating agency, which in my view is the biggest institutional problem concerned, if the sewage comes from Cleveland, and I am talking about the large quantities of the liquid mass, I am talking in the neighborhood of what, Dr. Speakman?

DR. JIM SPEAKMAN

770 million gallons per day.

COLONEL MOORE:

770 million gallons per day to take out to that farm land to sprinkle. 770 million gallons. You are talking about that quantity leaving Cleveland, and if it is

1
2 to be pre-treated -- by the way, we never spray it on the
3 land. It at least has been treated by secondary treated
4 process. In other words, it has gone through the same
5 level of treatment that you have lived with for the last
6 one hundred years before it reaches the ground, either by
7 the process that you use today to get it there, activated
8 sludge, the normal conventional process, or aerated lagoon,
9 which is a three bay process of anaerobic digestion of the
10 sludge as it goes through the process and then the
11 filtration of the water on out to the storage basins and
12 further settling and a final coronation before it is
13 applied to kill the bacteria. How concerned can I get?
14 You are putting that in a stream that goes today, and if
15 the farmer is taking that water out of the stream after
16 that effluent has been applied, he is not getting much
17 better quality if he irrigates his farm with that kind of
18 water. But he needs to be assured in the north central
19 part of Ohio that that sludge is going to get there and in
20 no more quantity than he can take. In other words, somebody
21 is not going to give him more than he can hold in the system.
22 Now, he doesn't have any control in the start of that pipe-
23 line. He ever has to make sure that once it gets at the
24 other end of the pipe it is going to be accepted, stored and

1
2 they can send some more down. Now, who controls those two
3 ends of the pipe?

4 I will be darned if I know, short of the state, and
5 I don't have a good solution for the state. I didn't have
6 a good solution for the farmers, and I told them so. Until
7 that's resolved, that's a bad alternative. To me those
8 are the two killers, and I think it was to them. They
9 aren't opposed to this plan, they are opposed to anybody
10 of the size of Cleveland sending effluent out to their
11 area. They got enough of their own that they have a
12 problem with already. They are most willing to apply this
13 technique and apply their own. I shouldn't word it that
14 strongly. They have stated no opposition given fifteen
15 times during the same meeting to do so against treating
16 their own, effluent on their own land. I guarantee you
17 I gave them that opportunity, and if anybody was there
18 they know that.

19 Hydrologic. We readily admit that if we take
20 770 million gallons of water today out of that Cuyahoga,
21 Chagrin and Rocky Basin and put it on that Sandusky Basin,
22 we probably are going to cause problems not so much in the
23 main river streams, but more importantly in the upper
24 basins and the small tributaries, et cetera.

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2 Why? We don't propose for any irrigation system
3 such as this to work in a storm. Normally, during the
4 early spring months and the late fall months, those storms
5 are predictable, but you better believe, as you all know,
6 in June, July and August, they aren't predictable. That's
7 the height of the effluent season and the farm season.
8 That's when we spray it. Given an unannounced summer
9 storm of the frequency that those occur right on top as
10 having already treated the land, we will increase the
11 flow of those streams by about 15 percent. If that storm
12 is of the flood peak, we will have increased that flood
13 peak by 15 percent. Now, that can be engineered out,
14 obviously. The Corps of Engineers has been engineering
15 flood control projects, dams and other disasters for,
16 you know, the last one hundred years. No, that's not
17 true. It was in 1931 that they got the business. I would
18 suggest to you, however, that we do those kinds of things
19 by the requests of local citizens and the local government,
20 but not until. The same thing applies here. In the first
21 place, I am not going to implement this plan. I am just
22 going to turn it over to the state. They have already
23 stated to you as they have stated in the north central
24 area that they are not going to implement it unless you want

1
2 it. But those are the problems.

3 Ground water contamination. The gentleman mentioned
4 it. There is a great fear of ground water contamination
5 from this effluent. This is the sprayed effluent. There
6 is going to be two studies you can search for that. Don't
7 believe me. The Penn State University is going to have
8 it's ten year report out on its study in August, and the
9 United States Environmental Protection Agency, actually
10 the American Public Works Association, is to do a compendium
11 of study on as many land treatment sites as they could.
12 They are already in being. God knows how many are in
13 being, but I think they are going to cover 130 or so. I
14 am not quite sure, because they haven't published it yet.
15 General indications are that most of them have not experienced
16 a ground water problem. They have found a few. In the
17 few that they have looked at, it seems that it is taken
18 care of by drain tiles and there is a plan that we propose
19 to apply ground sewage on top of the ground for farming.
20 We also propose to place tile beneath it. And that was one
21 of the reasons for that proposal. In fact, that was the
22 main reason for the tile proposal. The other reason for
23 the tile proposal is that we found that we could spray
24 more water if we could drain it off of the tile, so we could

increase the application rates. The cleaning of the effluent is accomplished in the first 12 to 15 inches of soil. That's if it is going to be accomplished at all, particularly, in the tight soils of north central Ohio. Now, you give me a sandy soil, and it may not be done in the first 15, but it may not be totally done at all because the filtration rate is so quick. It just runs right through. Give me the hard crust, and I will get to your problem. Give me the hard crust of your mine land and if it percolates through at all we're going to be damn fortunate, because that's exactly what we want.

We have to break up that soil. That's what the restoration is all about. There is no organic material out there today.

What we're going to probably have to do is dike the stuff so it will stay in place so it will stay long enough to filtrate. That's what it is all about. Let's go on with the concerns, and I am sorry to bore you with this, but I was asked, and I will bore you with it.

Transport of effluent. That has to do with whether it is going to come out raw or come out treated. We don't care. It costs you more to treat it before you transport it. It costs you less to transport it and then treat it.

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2 The decision is yours. Is it going to stink? Is it going
3 to stink both ways if it is going to stink at all? The
4 tunnel is created if it is raw sewage. That takes care
5 of the smell during transport. Will an created lagoon
6 stink? If you properly design it, if you properly operate
7 it and you properly maintain it, and you don't build
8 buildings around it so fast that you don't overload it,
9 it should not stink.

10 However, if you do overload it or don't properly
11 maintain it and operate it there and so will your secondary
12 treatment plants up to date. There is no difference. And,
13 so will the effluent out of that secondary treatment
14 plant if you overload it. That's today and so will your
15 rivers if you flow it into the rivers and they do today.
16 There is no difference. Will sludge on the strip mine
17 lands smell? Given the right humidity, given the right
18 heat and given the right rainfall, prior to that, yes it
19 will smell. For long? No. I don't have to tell you.
20 There are probably quite a few of you in here particularly
21 if you are farmers that if you used it on your farms
22 already, you know whether the smell stinks, stinks pretty
23 or otherwise. Given the right conditions at the right
24 time, that is true.

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2 Is it bad? I don't know. That's a public concern.
3
4 You have to measure that. We are concerned about it. In
5 the cases of the north central area and the aerated lagoons,
6 we added a tree barrier around the lagoons to protect
7 against that smell if it did smell against that smell
8 oozing, if I may use that term, out from the boarders of the
9 aerated lagoon itself. We weren't so much concerned about
10 it that we needed a covering, a building or something, but
11 we just wanted to keep it concentrated within the area of
12 the lagoon if, in fact, it did occur.

13 So, we did look at those things. The aerated lagoons
14 I have already covered.

15 Agricultural. The heavy metal contamination, which
16 is my view is the most serious problems of ground water
17 contamination, our study has already been eliminated, and
18 I mentioned it only because I know it would come up. We
19 propose that industry extract the heavy metals prior to
20 the use of the municipal system, and we have concluded to
21 the state that that's a must. Until such time that proper
22 data can be collected to say it shouldn't be a must, we
23 would rather be safe than sorry. We're taking the
24 pollution out of the streams today at a very heavy cost to
25 the taxpayer. God knows what it would take to take it out

1
2 of the ground one hundred years from now if we would
3 pollute that.

4 So, we're concerned about that. We are very
5 concerned about that. And we have taken the very heavy
6 metals out that the industry put in. Are there heavy
7 metals left? There are heavy metals in the municipal waste.
8 If you collect storm water, which is proposed here, there
9 are heavy metals in that, but not to the extent of the
10 industrial waste. I understand in some areas now they are
11 mixing a little iron, because they put too much lime on
12 the soil. Now they can't release the nitrogens and the
13 phosphates because the lime has it contained, and the
14 iron, oddly enough, releases it. I am not
15 a chemist; I am not much of a farmer, and some people say
16 I am not much of an engineer, but I will tell you one
17 thing. I'm concerned about public feelings. So I get
18 a little bit warmed up when somebody says "You haven't
19 looked at it." We have looked at it. It is documented.
20 Everything I told you is now in that study, all 32 pounds
21 of it. It is in there somewhere. And knowing that every-
22 body wouldn't read it, I care out and told them about it.
23 I got nothing to hide. It is your project. You have
24 got to live with it. You not only have to live with it,

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2 you have got to pay for it. So, I don't want to hide
3 anything from you. It is not my intention.

4 Farm management. I talked about it. Farmers are
5 of the psychological breed that won't take a new idea in
6 mass of skill. They never have, and it's going to take
7 generations to do so. By God, I don't blame them, because
8 their livelihood is in that ground.

9 What I am suggesting to you is that no conclusion
10 that we have made to the state that I know of today exists
11 that any project that is a piece, part or parcel of any
12 of the four plans be accomplished on a large scale, and
13 initially, that it only be accomplished on a small scale
14 completely monitored to take care of the kind of concerns
15 you have addressed, sir, because we don't know whether
16 they are there or not. We think we have engineered them
17 out, but sometimes statistics and data lie.

18 I trust my slide rule only to a decimal point.
19 Past that, I can't read it. But that decimal point may
20 be crucial one hundred years from now. That's why we
21 should continue to monitor every project that we do. And
22 we have suggested that to the state. I am sure the State
23 is just as concerned as we are, because I have talked to
24 them throughout the study. Regulations need to be established.

on those monitoring systems and enforce those monitoring systems and not only on what we propose for the future, but on what you have today, which isn't done today. So, we care. You bet we care.

Now, that takes care of the concerns of the west. Let's take care of the concerns of sludge management and the application of sludge management on strip mine lands. I don't know how that much we could do with four million gallons of water per day, which is the transport water for the sludge slurry, because it comes out in slurry filtered to the acreage that it is placed upon. Strip mine land would do to ground water as deep as what you are talking about, sir, unless there is an open hole. And you have pointed that out. There is no question that we could go around and plug all of those holes that we can find before it is applied. Can we find them all? I doubt it. Could anybody find them all? I don't know. If the Indians had dug some of them, I doubt it. Somebody has got to know where they are, or you have got to survey the ground, and that could be done. But we'll find most of them. Will the water get down through those we're spraying on? We have considered and we haven't designed it, and it needs to be designed. I think a maximum application of two inches

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2 at one time is necessary. That is sprayed on, and if you
3 have ever seen it, it is like you spray grass seed fertilizer
4 and water onto a lawn. It is the same kind of application
5 and the same kind of technique. It need not be done that
6 way. You can do it in any kind of thing. You can apply
7 it one-tenth of an inch a day or two-tenths of an inch
8 a day. Or one one-hundredth of an inch a day. You can
9 apply it in any way that you want. 90 percent of it at least
10 is water, not 95 or 97, and the rest is solids. It has
11 been treated 28 days since it was manufactured in a
12 digestive system to kill the bacteria.

13 Dr. Speakman? My Dr. Speakman, a P.H.d. in sanitary
14 engineering will go through that process in explanation
15 for you in a minute. Lieutenant Speakman, Dr. Speakman,
16 whatever you want to call him. And I trust him. He is
17 not the only one that can tell you about it.

18 Go seek information, but don't accept it. Monitor
19 it when you put it in. We have got some plots that are
20 up near Akron that I mentioned to you. I walked out there
21 yesterday, and I saw those plots. I went out with the
22 guys that monitored those plots, a professor and P.H.d.
23 at Kent State University. He did that when he first got
24 the sludge under in 1966. The only way he could test

the ground underneath it was to rake it up, because it
was a hard cake by then, and the water hadn't infiltrated or
percolated and inch into the soil. It just stood there
right on top just as if you had taken a blanket and laid
it out right there. There was not a bit of growth, nothing.
That was a year later. We tried to put a shovel in it and
couldn't get it past that layer of applied organic matter
itself. Three years later he hit down a little bit. The
roots started going down a little bit about three or six
inches and you couldn't go any further. They spread them-
selves sideways and they did grow between the then enriched
soil and organic matter that had been applied but couldn't
go any deeper. And three or four years afterwards you could
put that shovel down 24 inches and he would go right outside
that little strip bed, and he still banged against the top
of the rock on top of the strata. That's what we're trying
to achieve. He has got a grass crop on top of that soil
on that strip mine in that area today in a 50 by 200 foot
section. He has put in stuff seven years ago. It has got
the prettiest green grass on it. He has got pine in it.
He has got many many trees in it. You never thought he
would be able to raise a pine. He waited two or three years
before it popped up from the ground. They all started to
seed. So it will activate and restore that land. Will it

cause damage to river beds around the land? We hope not.
We don't think so. We have talked to the Huntington
District about this before. We have talked here about this
before. Certainly, we don't want to do anything to
violate the already damaged streams in the area and
definitely don't want to do anything to violate the under-
ground water which in many cases may still be pure.

If they run through the strip mine areas, they may
already be polluted with metal, because that has a pretty
big metal content of its own and when that water washes
through and the holes that you speak of are through the
substrata as from water flowing above that, it is going to
percolate through also. You can with restoration reduce
the acidity in that soil. In fact, it has been shown
into this experiment to even reduce the acidity in the
surrounding waterways, because we have, in fact, reduced
the acidity in the soil. Jim, would you like to comment
on the 28 day process? I call him Doctor because he doesn't
want to be called Lieutenant.

DR. JAMES SPEAKMAN:

Thank you, sir. Colonel Moore has asked me to
comment about the treatment process and the preparation of
the sludge before its application to land masses.

I must point out that the sludge is simply the organic material that is removed from the wastewater treatment process. After that organic material has settled and been removed from the liquid portion, it is withdrawn from the system, and then it is placed in an anaerobic digestion for a 28 day process, which converts that organic material into a simpler form in a structure so that it is a better food for plants as well as it kills the bacteria, principally, those that we're concerned about, the pathogenic organisms, those that cause disease which requires oxygen for survival. This anaerobic process is a process in the absence of oxygen, and for 28 days that sludge is treated in that process and the bacterial contamination is reduced to essentially zero.

COLONEL MOORE:

Thank you, Jim. Are there any questions anybody would like to ask? We'll attempt to answer them.

MR. JOHN NORVELL:

John Norvell, and I am a civil engineer from Columbus. My graduate work is in foundation engineering and I happen to know one or two people up here on the platform. Naan Osman is an expert in agricultural engineering, in particular, a sprinkler system. So, if you have

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2 questions in that area, you might talk to him. He has
3 had five years experience with the Germans. The thing
4 that I would like to state, I would like to address to
5 Mr. Lamb.

6 Now, I talk with rather a degree of indignation. I
7 am in the seat of one of the two raped Ohio counties.
8 The other one being Belmont. I am sure you are well aware
9 of Mr. Hatch at the Hanna Coal Company.

10 Now, this problem that we're all talking about this
11 afternoon is derivative of unlimited stripping with virtually
12 no restoration bond forfeiture over a period of years that
13 Mr. Hatch at Hanna Coal Company a year and a half ago
14 tried in Gallia County. That's down on the Ohio River.
15 I am a New Yorker, and I have been in Ohio only a year.
16 So, I have no axe to grind. I am not like Colonel Moore.
17 He is out of Buffalo too, but I would like to say
18 categorically when you bring up a town like Willard, you
19 make me furious. Willard has resisted the State of Ohio
20 for 45 long years in sewage treatment. Willard does not
21 have a sewage treatment plant that handles secondary sewage.
22 That's a primary plant. They are only satisfying roughly
23 30 percent of the five day biochemical oxygen demand and
24 30 percent of the suspended solids. When Colonel Moore

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2 talks about the stuff you are going to get here, if you
3 want it, and again, it is your decision, secondary treat-
4 ment means 90 percent satisfaction of a five day biochemical
5 oxygen demand and 90 percent removal of suspended solids.
6 You are getting a product that is 60 percent better than
7 the town you are talking about. I am still irritated.

8 Now, let's go on with Willard. Willard has been
9 captured by industry. The current laboratory report -- let
10 me put it this way. The last laboratory report that I saw
11 states categorically that in the effluent out of the Willard
12 plant it is 196 parts per million. Now, that is the town
13 you are talking about that doesn't want to receive the
14 effluent. What they should do is to ship their effluent to
15 Cleveland and let Cleveland clean it up to secondary treat-
16 ment and ship it back, and they are 60 percent ahead of the
17 ballgame.

18 You have a competitor. This county has a competitor
19 for this material. Now, for those of you -- I don't know
20 whether DFR or EPA is reading the clipping service that
21 the State is spending good money for, but Jackson County
22 wants Cleveland effluent in the worst way. The same
23 stuff you are objecting to, Mr. Lamb. Now, why? Because
24 suddenly Being American Electric Power has pumped 600 million

bucks into the Gadham plant that is going in in the Tri-County complex of Gallia, Meigs, and Jackson County. So, these fellows down there have access to outstanding New York engineers. And they are being guided by those fellows that, yes, that county being again the appalachian county could darn well use the materials, so the nitrogenous matter contained in that matter is worth money. And there are your competitors to date. I don't know whether you are aware of that, Colonel Moore, or not.

Now, with respect to the program, again, I am an outsider. I am a foreigner. I am no expert, but I couldn't have said it better than Colonel Moore said it. There are many things about the organisms wrapped up or little bugs that eat all the excretia that we're talking about to the extent that every sewage treatment plant in the United States is different. The bugs are different. The carrier medium is different. The effluent is different. Everything about it is different, so you don't know, but it appears to me that you got a prudent set of options. It is your choice, but if it is monitored on a small scale, you find out that you don't have all this sinking into the holes routine. And let me tell you that the sulphuric acid that is caused by the exposure, sulphuric water and sulphuric

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2 acid, the sulphuric acid is so bad in Gallia County,
3 TPH is down to two in Raccoon Creek, and they are trying
4 to clean that up.

5 But you are talking about a little demand for
6 oxygen. Well, how, there is only a ten percent demand for
7 it when it comes in. By the time it goes through this
8 pipeline, its additional aeration is applied, percolates
9 through a tile field and exposed to oxygen. The name of the
10 game is to feed it enough oxygen so it becomes thoroughly
11 digested. Don't let sewage kill you, because right now
12 I have just yesterday planted a flower garden and a tomato
13 garden for my wife using thoroughly digested sludge from
14 Lockborn Air Force Base. I am growing tomatoes, and I am
15 not that much of a jackass. The nitrogen is there. You
16 have got it offered to you on a silver platter what is 770
17 million gallons a day. If you start small and monitor it,
18 I don't see how you can loose, and with that, Colonel
19 Moore, I will shu .

20 COLONEL MOORE:

21 Thanks, John. I haven't seen you since 1954.

22 JOHN NORVELL:

23 I didn't want to admit that I knew you, Bob.

24 COLONEL MOORE:

Neither does the Willard County people. Yes, sir?

1
2 MR. BOYD WALLACE:

3 Colonel Moore, I have a few words.

4 COLONEL MOORE:

5 Yes, sir.

6 MR. BOYD WALLACE:

7 I will mention first that I have had experience
8 with the strip mine reclamation. It has been 29 years
9 ago since I started observing reclamation on strip mine
10 lands in Ohio. Different things that could be done to
11 make these lands grow something.

12 There is a lot of difference in those strip mine
13 lands. The same answer isn't the same answer every place,
14 but I didn't come up to talk strip mine lands.

15 I came up to mention more of the use of this material
16 on agricultural lands and what I think is going to be the
17 final solution that comes up. Nature's way of handling
18 this has been through demands. Man in concentrating his
19 population as so concentrated this material that goes local
20 areas where it is concentrated cannot begin to handle it.
21 The material properly handled from what I have observed,
22 and I am going into that, doesn't seem to have undesirable
23 or harmful effects. Coming down to this reasonably, when
24 Becktell engineers started experimenting with the experimental,

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2 pipeline and after them the Hanna Coal Company, I was on
3 the Board of Health. I was asked in northern Tuscarawas
4 County about this material being piped into our counties.
5 They said, "Well, the paper said it was." So I immediately
6 got on the ball to see what was coming in as to what nature
7 the Board of Health didn't know about. And maybe I made
8 myself obnoxious to those who were doing it, but they put
9 it there at my disposal what information they had.

10 From that time on, I have been trying to learn more
11 about this material. Later a group just went to St. Mary's,
12 Pennsylvania with a small town with a small plant with
13 somewhat the same type of treatment that is being used or
14 opposed or had been used, I believe, at that time for five
15 years, putting all of their sludge on the lands in the area.
16 I won't say agricultural land, because most of their land
17 is not agricultural in our standards. The strata there is
18 very nearly that what we did have in northern western
19 Harrison County. The area from Philadelphia crossroads about
20 250 towards Bowerston. It is the strata immediately
21 around the number seven coal and is the same nature as that
22 strata there.

23 I am mentioning that for those who are saying there
24 is a difference in the stratas. The application was being

made on land that was wasteland in order to get some sort of a cover. It is being made on land used for agriculture. I am going to take the agricultural land first and mention one thing that we did there. They were applying that day, that day because perhaps the atmospheric conditions were right, there was no odor, they were applying on land that was going to be plowed. They had applied on land nearby that was already in crops from the year before. Having learned these things and having made up my mind and having told those who organized the trip that I would go on one condition, I would talk to whom I pleased. I would not follow any guided trip. I observed where they were applying this material a house on a lot which evidently was not a farm house. I suggested that I wanted to talk to those people. Our guide from the plant said, "Well, I will drive over and see if they are home." I said, "Oh, no. I will talk to them first." We went over to the place, Mr. Ronsheim and Mr. Hatch and I, and we found that my assumption was right. The man had just come home from work. I asked if they had any objection to this sludge application close to them because it was coming perhaps within one hundred fifty feet from their lot. At that time I asked if they had gone on the other side the year before.

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2 and they said that they had not.
3

4 It was not nearly objectionable as the manure the
5 man hauled from his barnyard. I asked if they had heard
6 of any instances of anyone having any objections to this
7 operation or any water being hurt and, of course, they
8 were not water engineers, they were ordinary people. They
9 said that they had not. Since that time, I have observed
10 and made it my business to check on sludges that have been
11 used, maybe I should say bootlegged, from plants in this
area and found somewhat the same thing.

12 So, it is my conclusion that if we would forget the
13 word disposal and use the word "use" that we would be
14 farther ahead, and the people of this county in the end
15 will be ahead if this material is used. If it is used, it
16 is used under those restrictions that will take care of
17 the people, the water and other things. There is need for
18 safeguards. There is no question. I still am going to
19 question Colonel Moore's suggestion of two instances of
20 an application. I think on some kinds of soil that is too
21 much, on hillside soil particularly. I have also worked
22 with this. I am not speaking for the Farm Bureau here,
23 because I am saying that we didn't discuss on the Board,
24 but the Farm Bureau Board has acted in favor of this being

1
2 brought in under these conditions, and a copy of those
3 was sent to Colonel Moore of what we thought would be
4 necessary until careful controlled experiments showed that
5 other things, heavier applications and so forth, could be
6 safely used.

7 That is my thinking now and today. There are, perhaps,
8 some risks, but if we can encourage especially on some of the
9 poorer lands a heavier vegetation to hold back run off water
10 and to hold those things out of our streams, in the end,
11 we will come out with better water both underground and
12 in our streams, because the top 15 to 18 inches of our
13 soil is for the purification of water and other things takes
14 place, where the air and bacteria can work upon it. There
15 is, I will say, an indifference to Mr. Lamb, some open holes.
16 There are not any in my pasture or crop lands. I couldn't
17 use them that way, but I think that it is my opinion as
18 to the time that I have looked at it that this county would
19 be ahead as a county if this material is used with the
20 proper safeguards.

21 COLONEL MOORE:

22 Thank you very much, sir. That whole study effort
23 has been pointed towards the feasibility and the possibility
24 of using all the by-products of the waste treatment process,

1
2 and I agree with the gentleman that just spoke.

3 We ought not to use the term "waste" anymore. This
4 is not waste. We have got a prosperous battle on our
5 hands for the future. We are running out of that particular
6 mineral, and if we use that one, you know, we may not farm
7 at all in this country, and we have got to capture what
8 we're throwing into the streams and washing out into the
9 ocean what we can't recapture from the water. It's the
10 only way to recapture it again, is to put the treatment
11 process where the good Lord wanted it, on the land and not
12 in the water.

13 MR. FLOYD LAMB, SR.:

14 Sir, what will they do with this stuff now?

15 COLONEL MOORE:

16 With what stuff? The sludge? It is in drying beds
17 as to the process in Cleveland today. It is in the drying
18 beds in Cleveland today for some parts. The major part of
19 it and the problem we have and the only one thing I may add
20 is that we have opposed the previous planning exercise of
21 the State. It is incinerated in Cleveland in the main.
22 And current plans call for those incinerators to be rebuilt
23 or renewed for another 20-year life. That's the biggest
24 mistake in my view that we could make in a short term

1
2 decision that was ever possible, and if that's allowed, we
3 can live with our dirty process another 50 years and have
4 it in the streams again for another 50 years. We deserve
5 that if that's our decision process in my view.

6 That's what they are going to do. They are going
7 to burn it again. Now, Cleveland would rather not do that.
8 And Cleveland seems to be in agreement with the land
9 restoration or the strip mine restoration process to the
10 agreement I think of taking the same funds publicly and
11 putting them to this process on their end of the pipeline.
12 And I am all for that. I share some of your concerns, sir,
13 but I have shared for 100 years the concerns as an engineer
14 of those who went before me, and only to live with their
15 problems trying to engineer the way. It is not easy. By
16 God, we better go back to some other process other than
17 putting it in the water. I tell you again there are just
18 as many concerns to the design of it to the advanced
19 biological physical-chemical if not more than any land
20 treatment process that we discussed here today.

21 If I had my way, I would give you all 770 million
22 gallons, but I can't bring that much out of the Erie basin,
23 because you need it worse than that good productive farm-
24 land over there in Willard needs it, but there, you see, I
don't want to contaminate the soil, so you have to have
the crop pattern that will take up the nutrients that are

1
2 applied. In giving you the sludge, however, we're giving
3 you the better part for the job to be done.

4 You have got all the organic material. The thing
5 they have is good organic material. They don't have enough
6 nutrients. The effluent contains the remainder of the
7 nutrients. In fact, it contains about the last five to
8 ten percent of the solids in dissolved or suspended state
9 in the form of these nutrients, and it goes out with
10 that wastewater for treatment. Those nutrients are
11 absorbed in the first ten to 15, whatever inches of topsoil
12 and then they are taken up by the crops eaten by the human
13 and returned to the soil in the way I am describing. You
14 know, that was the old cycle. We just disrupt that
15 cycle and put it in the plant and send it to the water.
16 Now, the part we're giving you is the removal of the
17 solids, the first 95 percent of those solids, which have
18 all the organic material with them, and what you lack on
19 top of that strip mine area that was taken away by man,
20 the organic material. You also get nutrients. The nutrients
21 in this case are not as important as the organic material.
22 You have got to have something to start growth so the
23 bacteria can grow in the top part of that soil in order to
24 break that soil back up and loosen it so it can grow, so
it can have life and so it can have oxygen. And that's

1
2 what we are talking about. Any other questions?

3 MRS. D. C. McMATH:

4 Who is going to pay for all this?

5 COLONEL MOORE:

6 The paying as we have determined it, and that
7 question really should go to somebody else besides me, will
8 be paid by the guy that manufactures the sludge and not
9 by the guy that receives it. I am certain that will be
10 the case in the near term. I can't reassure you that that
11 will be the case in the long term, and we discussed this
12 the last time I was in town. And the agreements between
13 communities and local governments have to be such that
14 you are protected on that side of the coin. The other
15 way is obviously the land is going to have a fair value
16 on it once it is restored. So you get into an institutional
17 problem and push it on the land initially while you are
18 treating it, and the resale value could pay for the total
19 system by the time you finish it. You will have a good
20 crop of grazing grain, grass and that kind of material
21 that you can grow there. I believe in five to ten years,
22 not 15 to 20, you will be grazing cattle out there. You
23 will be grazing cattle sufficient in numbers per acre to
24 make a profit, and so it will be productive grazing cattle

1
2 land. There are many ways to repay for the system. You
3 can pay for it by procuring the land first, treating it
4 and then reselling it at the better value, which will pay
5 for the system itself. How you go about that, I don't know.
6 Is it saleable? I don't know. I didn't look into it, and
7 I am not going to look into it. I just looked at it. It
8 is there. The remainder is up to you, and the state and
9 local community and the government.

10 MR. JOHN NORVELL:

11 Bob, I believe there has been a change. Hasn't the
12 appiacian group made monies available to run, I think, it
13 is just solids only?

14 COLONEL MOORE:

15 There are monies available, I believe, and correct
16 me if I am not correct fromthe Appalachia Region for research
17 and study in this. I think the State has gone in for some
18 of that money, is that not correct?

19 MR. ART WOLDORF:

20 Yes, that's correct.

21 COLONEL MOORE:

22 And will continue to go into it.

23 MR. JOHN NORVELL:

24 They might not have to pay for it, right?

1
2 COLONEL MOORE:

3 Well, I think the Appalachia calls for, I think, was
4 it 50-50?

5 MR. MAAN OSMON:

6 It is 80-20

7 COLONEL MOORE:

8 Okay. It is 80-20. There are many ways to go about
9 it. You build it as part of the system, the construction
10 costs are 75 by 25 by the Clean Water Act Amendment, you
11 see. So there are plenty of ways to do that. I really
12 didn't come here to get into the financial aspects. I
13 really shouldn't. I really, ladies and gentlemen, don't
14 care whether you accept it or not.

15 MR. ART WOLDORF:

16 I think through the ARC, and the State, there is
17 a possibility that if we could get some funding assistance
18 legally up to 80 percent of the cost, the capital cost, the
19 construction cost, but I think in the long haul one of
20 the big things is going to be operating costs. In that
21 situation there, Colonel Moore said the guy that creates
22 the sludge has the responsibility for getting rid of it.
23 Of course, if he can sell it and it becomes a saleable
24 product, then he has every responsibility to sell the stuff.

I don't think it ought to be considered as a thing which would be operated solely by the producer of the sludge. It might be difficult to assume that the Cleveland Regional Sanitary District would operate a system pipeline down here and get rid of it all by itself. That might get into some governmental difficulties, so that must be worked out in cooperation with the Harrison County efforts. But at any rate, it ought to be perfectly clear that Harrison County would not have the financial responsibility to pay for labor in getting rid of this responsibility.

MRS. D. C. McMATH:

If the coal companies think it is too expensive to level those lands, according to the way they are proposed to, how in the world are they ever going to level all of these old strip lands and still make a profit unless it is going to be part of the taxpayer's money to level that land and make it usable?

COLONEL MOORE:

I don't know who is after the profit. If the profit is to be made by private industry, then private industry ought to take the cost of making the profit. Therefore, if that's the case, then Hanna Coal Company ought to restore the land itself.

Now, it is going to be a community project that's
a different thing. Certainly, you would be hard pressed
to get federal funding, 75-25 or otherwise if, in fact,
the final man to make the money off the project is a
self-employed self-owned project. I am very fearful that
that would be a hard sale. But that is not up to me either.
That's up to the state, how they go about it. I don't
know that they can answer that question at this point. But
I really got up to answer your question about leveling.
I talked about this a little at Noon today.

If you are going to use the form land or the land
in the final analysis for farming, it is one thing. I
don't really think you will ever get to that point, nor
would you want to maybe, but if you do, it is far enough
in the future not to worry about it today. So, therefore,
if you are only going to use it for grazing for cattle in
the short term as a business proposition and to live on it
maybe, you know, you need not do as much grazing as you
would if you were going to farm it.

You can, as you do your primary grading, leave the
blade of the dozer -- just leave the lump of soil that it
finishes with around so you form artificial diking through-
out the fields if you will. Then when you spray and
apply, the dikes will hold the spray. It doesn't need to

1
2 drain. In fact, you don't really want it to drain initially.
3 And then if you graze cattle on it, there is no problem.
4 The amount you build up, as small as they are, aren't going
5 to hurt the cow. It is not going to know the difference.
6 It is definitely not going to hurt the ground.

7 There are deep cuts and valleys in those areas.
8 Those have to be filled. The ground has to be, you know,
9 sloped and shaped. How can we do that? You have got a
10 problem worse than wastewater management facing you. You
11 have got a solid waste problem. You have got carloads of
12 it coming out of New York City that John Norvell helped
13 create when he was over there. He contributed his share.
14 All of us did. It has got to be put somewhere. Again,
15 what do you do with it?

16 I contend to you that one of the ways to fill those
17 valleys is by just that. Would that hurt the kind of
18 project I am talking about? No. Oddly enough, in this
19 case we have got a plus. The two will work very beautifully
20 together. There is no question about it. There is only
21 enough sludge, and I think I described the last time I was
22 here, there is probably not enough sludge developed in
23 Cleveland to treat, but you have about 2,000 acres of land
24 out here anyway. You have got two hundred and some odd

1
2 thousand acres flowing through the valley. Jackson County
3 has gotten more. There are other pieces throughout Ohio.

4 If that's not sufficient, you can go over into
5 Kentucky where I was born or raised, not born, I was born
6 on the top of a hill in Virginia, but you can go over into
7 Kentucky and find all the more if you wanted and all the
8 Appalachia region. I married a gal from Oklahoma, who John
9 Knows, and all that strip mined area is out through there
10 also. So there is plenty of strip mined areas to be treated
11 in this Country. And oddly enough, there probably isn't
12 enough sludge to do it in a short period of time.

13 I know that's amazing, but there just isn't that
14 much developed, that much sludge developed in an area for
15 that kind of application. So the two projects can really
16 work close in hand, because by the time you do the land
17 fill, you know, the solid waste fill, you know, get the
18 land shaped paying for that cost, then apply your sludge
19 on top of it, you have got a finished product paid by two
20 very needed environmental crises. Does that answer your
21 question?

22 Yes, sir?

23 MR. FLOYD LAMB:

24 Do I gather from your conversation that this sludge

1
2 contained care and you would not bulldoze in back of the
3 topsoil and save it, or do they still have to put the topsoil
4 on and then this on top?

5 COLONEL MOORE:

6 I have told you nothing today that should not
7 require strip miners to fully comply with the strip mine
8 regulations that have been passed, nor anything that would
9 tell you they need not do that. No, sir. That has to go
10 back over there. What I am suggesting to you is before you
11 place that back over there, rather than doze out all the
12 cuts and valleys, you might want to fill with solid waste
13 first, because you can't fill all those voids from whence the
14 coal came.

15 MRS. D. C. McMATH:

16 Would you ask the representative for Mr. Whitman if
17 these strip mines are supposed to replace the topsoil?
18 Now, are they supposed to be replacing them now or did they
19 change that law again?

20 JOY FITZGERALD:

21 The law, as stated at this point and time, requires
22 that the topsoil be removed and stockpiled and then be
23 reapplied.

24 COLONEL MOORE:

1
2 This is the new law that was passed.

3 JOY FITZGERALD:

4 Yes. April 10, 1972.

5 MRS. D. C. McMATH:

6 Do I understand that they are trying to change that?

7 I thought I read that in the paper.

8 JOY FITZGERALD:

9 There are several bills in the General Assembly
10 that would amend the current law. If you leave your name
11 with me, I will see that you get copies of that.

12 COLONEL MOORE:

13 Fair enough? Any other questions?

14 JOHN NORVELL:

15 Let me say one thing about milorganite. For one
16 thing, you can buy milorganite in New York and Houston,
17 Texas. This smell problem, and I am a city boy, but mil-
18 organite, if you just take it, it is granular. It comes
19 in a 50 lb. sack that looks like a cement sack. It is
20 lighter in weight, however, than cement. It used to cost
21 a buck a sack, but you pick it up in your hands in a
22 suburban area and scatter it on your lawn. You try to do
23 this right before a rain, and then you don't have to use
24 that high water rate to water your lawn.

When that hits the land, you don't smell a thing or even five foot away. But if you put your nose down to the ground, it smells, frankly, like a bathroom or simple sewage. The point is with a lofting of breeze, and this doesn't hang around long, but it is there for a short period of time and it is good. It is a good product and the grass grows great. In Seattle and Houston, Texas it works good.

COLONEL MOORE:

Thanks, John. The only difference is we would put it with water in order to get it out of here faster and get it on the ground faster. It is just in a dried ground state the way John is talking about.

MRS. D. C. McMATH:

I am curious. Why is this gentleman -- why did you come to Harrison County if you don't live here to express your opinion on this?

MR. JOHN NORVELL:

Well, I had an idea that maybe Mr. Hatch would be here. I would rather like to look him in the eye every opportunity I get.

UNIDENTIFIED MAN NUMBER ONE:

Well, I will tell you what you can do. I have heard and sat here and listened to your dribble just about as long

1
2 as I can stand it. We have had so damn many people come
3 here from every place else to come to Harrison County and
4 tell us what's wrong with our county. We have been well
5 told today. As far as I am concerned, you can take this
6 garbage and this sewage and this fella and Jackson County
7 and keep it. That's my opinion. I am just a citizen and
8 one county commissioner.

9 COLONEL MOORE:

10 Any other questions?

11 UNIDENTIFIED MAN NUMBER TWO:

12 I am from Harrison County also, originally from
13 Belmont. I was a little farm boy with strip mines all
14 around the farm. We went to the county seat and they said,
15 "Tuff Boy. You are on the end. We aren't worrying about
16 you."

17 Now, it seems to me all I have heard today is about
18 New York City. I am a little bit angry too because all
19 of his problems he wants to bring out here, because he
20 is a New York engineer. Why didn't they keep it in New
21 York. Do you know why? Because they have so many problems
22 in New York they brought the problems to Jackson County.
23 What I want to do here is express my opinion that I don't
24 appreciate people coming from the outside telling us what

1
2 to do, but I think we ought to think logical and just
3 because we get irritated, we should still consider the
4 product of a product.

5 It might be something we can use and do us a lot
6 of good.

7 COLONEL MOORE:

8 Thank you very much. If anybody is worried about
9 whether Mr. John Norvell works for the Corps of Engineers
10 or is associated with me, I am as surprised as anybody to
11 see Mr. John Norvell sitting in this room. The last time
12 I saw him he had the same uniform on I had, and he was
13 in Washington D.C. I didn't even know who he works for.

14 Yes, sir?

15 UNIDENTIFIED MAN NUMBER THREE:

16 It is true that probably a lot of the mining
17 companies in this area made mistakes. I will say this.
18 Of my knowledge of the mining in this area, I think if you
19 will check, I think there is not any company that does
20 the job of plugging these drilled holes that Hanna did.
21 They require every one of those holes to be plugged.
22 There have been thousands of oil wells drilled in this
23 county that are not plugged. But as to coal, I can show
24 you records, thousands of them, before Ralph Hatch was

ever born, so I think we ought to keep these individuals out. To get back to the Department of Natural Resources, I know of three people who approved, and this was by the Natural Resources of the State of Ohio, where industrial wastes are being dumped in. There is an application in for a fourth, and I don't know whether it has been approved or not, so there has been mistakes made, not only by the coal companies, but also by other people.

Now, I am like Dick. I think we should vote for benefits and secure the future and forget the past. If the mining companies made mistakes, they are paying for them now.

COLONEL MOORE:

I appreciate these comments. The Corps of Engineers has made a few in their lifetime also.

UNIDENTIFIED MAN NUMBER THREE:

I thought I made one once, but by God I was wrong.

COLONEL MOORE:

But we're not here to discuss whether the Hanna Coal Company or any other coal company had done wrong. We're here to discuss restoration of a void area of land as far as growth and productivity is concerned other than coal production. I think we have a solution to that problem

1
2 of non-productivity of that land that can make it fairly
3 productive in a short term period. All I am thinking of
4 is the thought process you ought to consider. And you ought
5 to consider it very strongly. There are competitors for
6 this. Obviously, there would be because there are other
7 lands than here that need it.

8 As I did last time, I suggested that it is still
9 available. I was asked at that time to proceed with the
10 State. There seemed not to be any animosity against it
11 strong enough not to proceed. I have kept it in the
12 recommendations of the study and the conclusions of the
13 study, and it will continue to be in the conclusion of the
14 study, because in my view -- and I did not decide it was the
15 best environmental option. Kent State of Ohio, the Kent
16 State professors, decided it when they evaluated the report.
17 None of them were engineers by the way. In fact, we
18 wouldn't allow an engineer on that staff. We had enough
19 other places. They made that evaluation, not I, and that's
20 in the report.

21 I think it is a very good one. That was their first
22 priority as far as they were concerned for the use of
23 sludge. It didn't have to be Harrison County. There are
24 a couple of reasons why it was Harrison County. Number
one, that is to Hanna Coal Company, or others, there is an

existing pipeline already established between here and Cleveland. What is the source of the material to Cleveland? What is the best way to bring it back? The same pipeline. Is it available? We think so if we hurry up. We don't know. That takes consideration and time with the State and to coordinate with the people that own it and with the rights of way.

Would it be cost beneficial if that were available? Yes, it would. Otherwise, you have got to build some other transport system, and that's already in being. Does it have a capital cost to it today? Yes, it does.

Would somebody have to pay for it? Probably. Would you have to pay its capital worth today? Probably. What is that? It is in the brochure. Read it. But I think that's all I am here to present today.

We can blame everybody sitting here for raping the streams too. That's not what we're here for.

UNIDENTIFIED MAN NUMBER FOUR:

Colonel Moore, there is a gentleman here from the Agricultural Research Development Center, and I am not sure whether he wants to make any comments or not, but I do know that he has had experience working with sludge.

COLONEL MOORE:

1
2 Are you talking about good Dr. Paul Sutton? I
3 offered Dr. Paul a chance when I first came in, when I
4 first met him. I had not met him before this afternoon
5 and that if he decided to make any comments throughout,
6 he should so indicate, and I would certainly appreciate
7 them. Do you want to make any comments, sir?

8 DR. PAUL SUTTON:

9 No. I really have no statement. But I would be glad
10 to answer any questions you may have on strip mine lands
11 and if you have any, I would be glad to try and answer
12 them.

13 MR. ART WOLDORF:

14 Would it be appropriate to ask you whether you had
15 an opportunity to gather any feeling for whether land or
16 coal might in some way benefit from that application of
17 sludge in some sort of way of what we're talking about here?
18 Do you have any conclusions?

19 DR. PAUL SUTTON:

20 I understand in our area there is greater demand
21 than supply. This is locally from a small area, and we
22 have obtained some of the material on toxic explore banks,
23 and we have gotten some outstanding results up to this
24 point.

1
2 COLONEL MOORE:

3 I would suggest to you that you get a hold of, if at
4 all possible, the ten year report from Penn State University
5 after they make it, and also the American Public Works
6 Association report which should be out sometime in August.
7 That's an U.S. EPA sponsored report.

8 Any other questions that I might answer or try to
9 answer? I have got a lot of them I could ask. Isn't it
10 nice to have sunshine out there today after all the rain
11 you have had? Thank you very much for attending. I
12 appreciate your patience and your understanding.

13 (At 3:30 p.m. the meeting was concluded.)

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ATTACHMENT 13

**CORRESPONDENCE
RESULTING FROM
FINAL PUBLIC MEETINGS**

I
DELBERT L. LATTA
8TH DISTRICT, OHIO

COMMITTEE
ON
RULES

Congress of the United States
House of Representatives
Washington, D.C. 20515

June 8, 1973

Dr. Ira L. Whitman, Dir.
Ohio Environmental Protection Agency
450 East Town Street
Columbus, OH 43216

Dear Dr. Whitman:

This will confirm my strong opposition to Plan C of the Wastewater Management Study for Cleveland-Akron Metropolitan and Three Rivers Watershed Areas.

I might add that I was authorized to express similar opposition to Plan C on behalf of my colleagues, Representatives Terryson Guyer and John Ashbrook, during a meeting in my office on June 6, 1973 with Robert Fulton, Coordinator of the Urban Wastewater Study Branch of the Corps of Engineers.

It is my understanding you have stated that Plan C will not be considered by the Ohio Environmental Protection Agency unless there were some affirmative indication of approval by citizens and property owners in affected areas. As I am sure you have already discovered from the public hearings, Plan C is clearly not acceptable to the people in the proposed site area.

Although I am aware that any recommendations made on the basis of the finalized Corps' study will come from your agency and not the Corps, I have been assured by Colonel Robert Moore of the Buffalo Office that the final study report will state that Plan C is not publicly acceptable.

jl

I strongly concur in this finding, and I am pleased to learn
that you apparently share similar views. I will appreciate being
kept informed of any future developments.

Sincerely yours,

jl *cc:...*
DELBERT L. LATTA
Representative To Congress

DLL:jeb
cc: Colonel Moore
Rep. Guyer
Rep. Ashbrook

Congress of the United States

House of Representatives

Washington, D.C. 20515

June 8, 1973

Colonel Robert Moore
Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, NY 14207

Dear Colonel Moore:

This will confirm my concern about the Wastewater Management Study for Cleveland-Akron Metropolitan and Three Rivers Watershed Areas. As you know, I discussed the draft summary report on June 6, 1973 in my office with Robert Fulton, Coordinator of the Urban Wastewater Study Branch.

At that time I expressed my opposition to Plan C as outlined in the draft summary, which would involve the transportation of effluent from the Cleveland Metropolitan Area to the North Central Ohio agricultural area. The affected 183-acre site involves portions of Huron, Seneca, Crawford and Richland counties, part of which lies within the Fifth Congressional District which I represent. I was also authorized at that meeting to express the opposition of my colleagues, Representatives Tennyson Guyer of the Fourth District and John Ashbrook of the 17th District.

My staff has informed me of your telephone call yesterday in which you emphasized the following points:

1. Your office expects to complete the final version of the study for submission to the Ohio Environmental Protection Agency by August 1, 1973, after reviewing the record of the public meetings.

2. The final version of the study will state clearly that Plan C is not publicly acceptable.

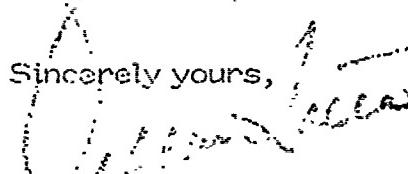
3. Any recommendations made on the basis of the Corps wastewater study will be made by the Ohio Environmental Protection Agency. The Corps role in this undertaking was solely in field of planning options to be considered by the state agency.

Your finding that Plan C is not publicly acceptable most certainly concurs with the views which many of my constituents have expressed to me, and I am pleased that such a statement will appear in the final report.

Even if some degree of public acceptance existed, Plan C in my judgment would be neither feasible nor equitable. For example, on Page 192 of the draft summary appears the following: "Plan C presents a very difficult institutional problem since the configuration of the system defined by that plan encompasses many counties and many watersheds. This plan would call for State control or a special governmental agency to operate it."

Your cooperation and understanding in this matter is most appreciated, and I trust you will keep me informed on future developments.

Sincerely yours,



DELBERT L. LATTA
Representative to Congress

DLL:jeb

cc: Congressman Guyer
Congressman Ashbrook
Colonel Raymond J. Eincogl

Route 2
Willard, Ohio
44890
June 7, 1973

Colonel Moore:

I wish to voice
my opposition to
Plan C or the plan
to pipe Cleveland-
Akron sewage and
waste water to
north Central Ohio.
(Willard and vicinity)

I do not want the
sewage and we do
not need the waste
water. Sincerely,

Lola A. Kemp

Opposed to Plan
C for the transfer
of Cleveland - Akron
sewage to the
Willard vicinity.

Mrs. W. E. Fritz
Attica, O.

I am opposed to
Plan C for the transfer
of Cleveland - Akron
sewage to the Willard vicinity.

Mrs. Morris. Willard Ohio

Opposed to Plan C for
the disposal of Cleveland -
Akron sewage in North
central Ohio by piping it
to Huron, Seneca and
Crawford counties

Mrs. Geo. Survey
St. 2
Attica, Ohio 44807

6-11-73

We are opposed to Plan C
for the transfer of Cleveland -
Akron sewage to the
Willard vicinity.

The Hoffmanns
604 Euclid
Willard, Ohio 44890

Dear Sir

Willard Ohio
June 11 - '73

I am opposed to Plan C for the transfer of Cleveland-Akron sewage to the Willard Vicinity

Miss Alta R. Dawson
R. R. 2.
Willard Ohio 44890

We are opposed to Plan C. We've done away with the outside privy, why bring us Cleveland-Akron waste? This is in a useless region. It is a progressive, productive area.

Mrs. M. E. Huffman
206 W. Pearl
Willard, Ohio 44890

I'm very opposed to
Plan C
for the transfer of Cleveland-
Akron sewage to the Willard
Vicinity Carl Spencer

R. 2
Attica Ohio
44807

R.F.D. 2, Box 176
Willard, Ohio, 44890
June 12, 1973

Col. Robert L. Moore:
Colonel U.S. Army,
Dist. Engineer
1716 Niagara St.
Buffalo, N.Y. 14207

Dear Sir:

I am writing you in regard to my opposing Plan C for the Transfer of Cleveland and Akron Sewage to the Willard Vicinity.

This would be a great damage to both health, and to one of the best Vegetable Growing Spots in the State of Ohio.

Many people are fed from the this already Golden Spots. Please try and give Clost Consideration to this Project.

Sincerely yours -
Albert M. Montgomery

Route 1
Willard, O. 44886
June 23, 1973

Dear Sir:

I am opposed to Plan C for
the transfer of Cleveland-Akron sewage
to the Huron, Seneca, and Crawford
county area!

Yours truly,
Mrs. Joan Kelley

Route #2
Willard, Ohio 44890
June 20, 1973

Mr. Robert L. Moore
Colonel U. S. Army
District Engineer
1776 Niagara Street
Buffalo, New York 14207

Gentlemen:

I am opposed to Plan C for the transfer of Cleveland-Akron sewage to the Willard, Ohio vicinity.

Sincerely,

Marilyn Hord

Marilyn Hord

Route #2
Willard, Ohio 44890
June 20, 1973

Mr. Robert L. Moore
Colonel U. S. Army
District Engineer
1776 Niagara Street
Buffalo, New York 14207

Gentlemen:

I am opposed to Plan C for the transfer of Cleveland-Akron sewage to the
Willard vicinity.

Sincerely,

Randy Hord
Randy Hord

Route #2
Willard, Ohio 44990
June 20, 1973

Mr. Robert L. Moore
Colonel U. S. Army
District Engineer
1776 Niagara Street
Buffalo, New York 14207

Gentlemen:

I am opposed to Plan C for the transfer of Cleveland-Akron sewage to the
Willard, Ohio vicinity.

Sincerely,

Leon Hord
Leon Hord

6-22-73

Dear Sir

We are opposed to Plan C
or the transfer of Cleveland - Akron
sewer to the Huron, Seneca and
Crawford County area

Yours truly

Thomas New
Helen New

June 24, 1973

Robert L. Moore

Colonel U.S. Army

Dear Sir;

We are opposed to Plan C
for the transfer of Cleveland-
Akron sewage to the Huron,
Seneca, and Crawford County
area.

Mr. & Mrs. Harold Miller
729 S. Main, Rt 4
Willard, Ohio 44890

P. O. Box 24
New Haven, Ohio - 44950
June 27, 1973

Dear Sir:

We are opposed to Plan C for the transfer of Cleveland-Akron sewage to the Huron, Seneca, and Crawford county areas.

New Haven Property Owners,

*William R. Simpson
Bernadine Simpson*
William R. Simpson
Bernadine Simpson

Willard, Ohio
June 27, 1973

Honorable Robert W. Dohore
Colonel U.S. Army, District Engineer,
1776 Niagara St.
Buffalo, N.Y. 14207

I am writing to you very much opposed to Plan B
for transfer of Cleveland as an sewage to the Huron,
Seneca and Crawford County area.

Why should our counties in this district be
forced to accept such a plan?

I pray you will do all in your power to have
the Cleveland - Akron take care of their own
sewage. Respectfully,

Mrs. Carl Berk
406 W. Emerald St.
Willard, Ohio 44840

June 27th 1973

Dear Sir:

I am opposed to
Plan C for the transfer of Cleveland
Akron-Sedage to the Akron Seneca
and Crawford County Area.

Please vote as being
opposed.

Thank you

Mrs. Harriet Frederick
584 Butler St
Willard Ohio
44890

Willard, Ohio

June, 28, 1973

Colonel Robert L. Moore,

Buffalo, N.Y.

Dear Sir,

I am opposed to Plan C for the transfer of sewerage of Cleveland-Akron to Huron, Seneca, and Crawford County area.

We, here in Huron Co. have problems enough to take care of our sewerage as I know Seneca and Crawford counties do. Why can't Cleveland and Akron do the same?

Sincerely,
(Mrs.) Letta Goodrich

591 Park St.
Hilliard, Ohio

June 28, 1973

Robert L. Moore, Colonel U.S. Army
Buffalo, N.Y.

Dear Sir:

I am opposed to Plan C
for the transfer of Cleveland-Akron
sewage to the Huron, Seneca, and
Crawford county area, in Ohio.

Yours truly,

Lucie Ketcham
(Mrs. Harold Ketcham)

July 5-1993
Plymouth Ohio

Dear Sir:

I am opposed to
Plan C for the transfer
of Cleveland - Akron sewage
to the Huron, Seneca &
Crawford County area.

Mrs Frank Dillon

Plymouth, Ohio
RD1 44865

Willard, O.
July 9, 1973

Col. Robert L. Moore
Buffalo, N. Y.
Dear Colonel:

We are
opposed to Plan C
for the transfer
of Cleveland-Akron
sewage to Huron,
Seneca and Crawford
County area.

So please
see that it is stopped.

Yours truly,
Mr. and Mrs. C. F. Daniel

R. R. 3

Willard, O.

Willard, Ohio,
July 10, 1973

Robert H. Moore
Colonel U.S. Army
Ret. Engineers

Dear Sir

Running a farm in Crawford County, I am very
much opposed to Plan C for the transfer of Cleveland -
(Akron sewage) to the Huron, Seneca and Crawford County
Area.

Faithfully,
Orie E. Kingsbury
619 Maple Ave.
Willard, Ohio 44890

League of Women Voters
of Tiffin

Tiffin, Ohio 44883

July 11, 1973

Colonel Robert Moore
Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, New York 14207

Dear Sir:

Several members of the Tiffin League of Women Voters attended the public meeting in Willard, Ohio, June 6, on the Wastewater Management Study for the Cleveland-Akron and Three Rivers Watershed Areas. At that time we did not have a prepared statement, but we would like to make several comments.

We prefer pilot or demonstration projects of land treatment of sewage before undertaking one the magnitude of that proposed in Plan C. Unforeseen problems could be corrected under pilot projects before disrupting the lives of those people affected by a full-scale land treatment program.

We are concerned about transferring water from one watershed to another. An increase in water from the secondary treatment effluent could aggravate sheet erosion problems in the Sandusky River Basin. Lake Erie, and agricultural rivers which flow into it, might benefit greatly from erosion control measures. We hope increased attention will be given to the problems in agricultural river basins.

Yours very truly,

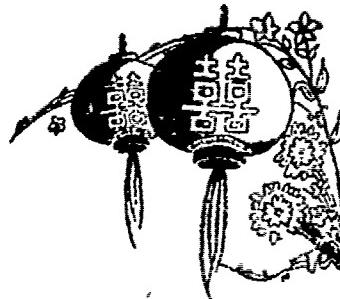
Freddie Larsen

Freddie Larsen, President
Tiffin League of Women Voters

Mary Lewis

Mary Lewis, Chairman
Environmental Quality Committee

My REDEEMER Liveth. Job 19:25



July 11, 1973
Rt. 4 Box 12
Willard Ohio
44890

我的救贖主活着。

約伯記十九章廿五節

Dear Sir:

We are opposed to Plan C
for the transfer of Cleveland-
Akron sewage to the Huron,
Seneca & Crawford county
Areas.

Sincerely,

Mr. & Mrs. Lloyd Coder

July 11, 1973

Dear Sir,

I am opposed to Plan C for the transfer of Cleveland-Akron sewage to the Huron, Medina, and Crawford County area.

Sincerely

Helen N. Miller

HAGERMAN'S

JEWELRY

SINCE 1893

21 Myrtle Ave.

+ P. O. Box 299

+ Willard, Ohio 44890

DON HAGERMAN
REGISTERED JEWELER
AMERICAN GEM SOCIETY

+ Ph. 935-3871

Dear Sir,

July 13, 1973

Yours,
I am most definitely opposed
to Plan C for the transfer
of Cleve - Akloss Sewage to
Huron, Tercena & Crawford
County area.

Very truly yours E.

Hagerman

Jim Hagerman

634 Dale Avenue
Willard, Ohio 44800
August 10, 1973

Robert L. Moore, Colonel
U. S. Army
District Engineer
1776 Niagara Street
Buffalo, New York 14207

Dear Sir:

I am opposed to Plan C for the transfer
of Cleveland-Akron sewage to the Huron,
Seneca and Crawford County area.

Sincerely yours,

Mrs Roy E. Tanner
Mrs. Roy E. Tanner

RD 2, Box 301
Willard, Ohio 44890
August 10, 1973

Robert L. Moore, Colonel
U. S. Army
District Engineer
1776 Niagara Street
Buffalo, New York 14207

Dear Sir:

I am opposed to Plan C for the
transfer of Cleveland-Akron sewage to the
Huron, Seneca and Crawford county area.

Sincerely yours,

David C. Tanner

David C. Tanner

RD 2, Box 301
Willard, Ohio 44890
August 10, 1973

Robert L. Moore, Colonel
U. S. Army
District Engineer
1776 Niagara Street
Buffalo, New York 14207

Dear Sir:

I am opposed to Plan C for the transfer of Cleveland-Akron sewage to the Huron, Seneca and Crawford county area.

Sincerely yours,
Mildred Tanner

Mrs. David C. Tanner

BD 2, Box 301
Willard, Ohio 44800
August 10, 1973

Robert L. Moore
Colonel U. S. Army
District Engineer
1776 Niagara Street
Buffalo, New York 14207

Dear Sir:

I am opposed to Plan C for the transfer
of Cleveland-Akron sewage to the Huron, Seneca
and Crawford county area.

Sincerely yours,

Ila Kay Tanner
Ila Kay Tanner

I am opposed to plan C for
the transfer of Cleveland-Akron
sewage to the Huron-Seneca and
Crawford County areas.

Clarence W. Briggs

Rt #1 Walnut Rd

Willard Ohio 44890

I am opposed to plan C for
the transfer of Cleveland-Akron
sewage to the Huron-Seneca and
Crawford County Area.

Karen M. Briggs

Rt. #1 Walnut Rd

Willard, Ohio 44890

Dear Sirs,

I am opposed to the plan C for the
transfer of Cleveland-Akron sewage to the
Huron, Seneca and Crawford County area.

LeRoy R. Briggs

R.D #1

Willard Ohio

Dear Sirs,

I am opposed to plan "C"
for the transfer of Cleveland-Akron
sewage to the Huron-Seneca and Crawford
County Area.

Sincerely

Tom C. Briggs

R.D #1

Willard, Ohio 44890

Robert L. Moore Colonel U.S.
Army District Engineer, 1776 Ni-
agara St., Buffalo, N.Y. 14207

Scarlett M. Adams
328 Willow St.
Willard, Ohio 44590

Dear Sir,

I am opposed to Plan C
or, the transfer of Cleveland
area sewage to the Nelson,
Seneca, and Crawford County
area.

Yours truly,
Miss Scarlett M. Adams
19c 11.